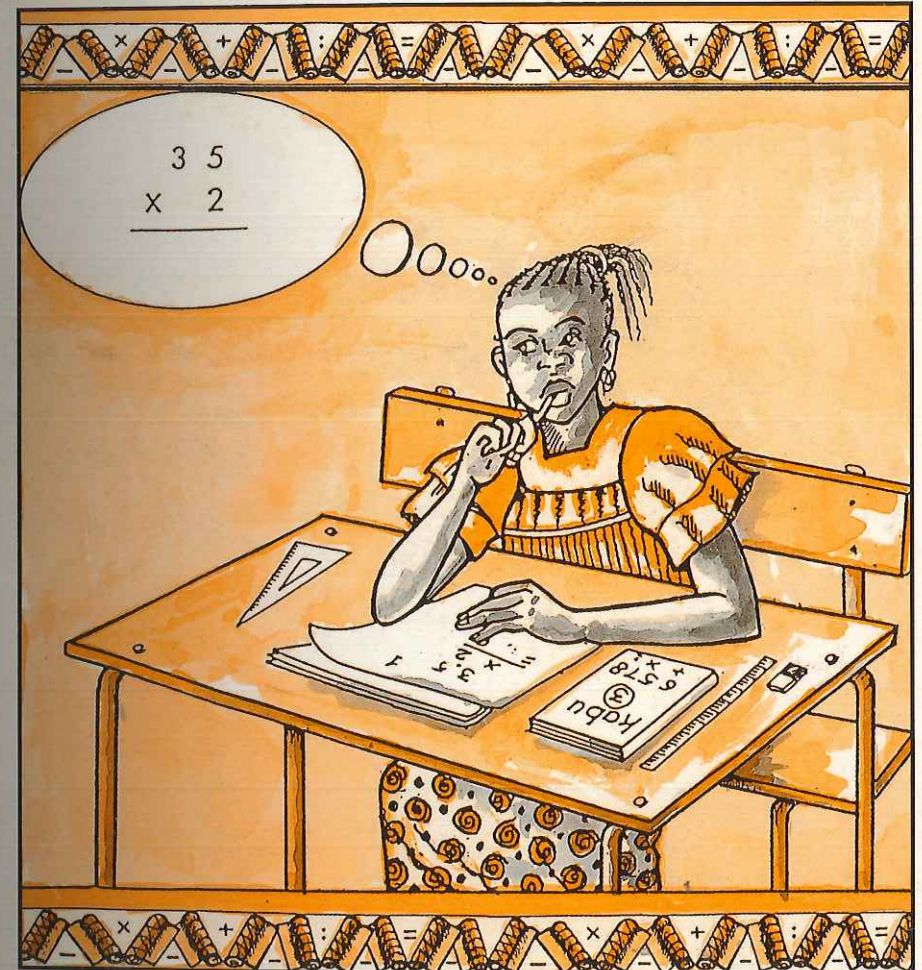


# Kabubayray

## Jiiri hinzantoo

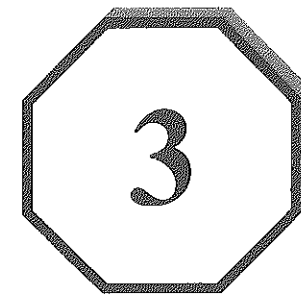
3



Kabubayray - Jiiri hinzantoo - 3

# Kabubayray

Jiiri hinzantoo



MEN - CNE

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**KABUBAYRAY-3**  
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**MEN-CNE**

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## CAWBOJJEY

	moo
Yaamar .....	9
Jiiri hinkantoo goy soolantaa .....	11
Jirbiyyaa goy soolantaa .....	16
Hinnawey nda kabu kabilawey .....	19
0 ka koy 1 000 (filla) .....	20
1 000 ka koy 9 999 hinnawey.....	22
1 000 ka koy 9 999 hinnawey bisaceraa .....	28
Hinna 2 wala 3 kañ tontonyanoo dimmaa si bisa 9 999: tontonyan teeyanoo (bila lanbari wala nda lanbari), alhaaley .....	32
Kaayan bila lanbari wala nda lanbari hinnawey ga hala 9 999 : nga maanaa nda nga teeyanoo.....	37
Hinna hinka wala ihinza kañ taabaroo si bisa 9 999. Maanaa nda alhaaley .....	43
Hinnaa fesu-fesuyan taabuyan ra .....	47
Taabuyan nda 10 wala 100 ; nda 20 ; 30 ; 40 ; 50 : teeyanoo bila lanbari wala nda lanbari .....	52
Zemna tetteyanoo ; hinna foo taabarey nda Zemnakey. Zemnari ceeciyani, sakuyan ra .....	58
Zemnayan kañ ra zemnaka ga ti kabu-ize foo, cindoo ga ti yaada (zemnaroo ga sawa) wala a si ti a .....	62
Kabuu kabila taacaa misey .....	66
10 000 hinnaa .....	69
0 ka koy 10 000 hinnawey bisaceraa .....	72
Kabuu kabila taacaa misey 0 ka koy 100 000 hinnawey ga .....	76
0 ka koy 100 000 hinnawey .....	80
0 ka koy 100 000 hinnawey bisaceraa .....	85
Kabuu kabila taacaa misey, 0 ka koy 100 000 hinnawey ga .....	87
0 ka koy 1 000 000 hinnawey ga .....	90
0 ka koy 1 000 000 hinnawey bisaceraa .....	94
Misey kañ ra kabuu taacaa ga tee 0 ka koy 1 000 000 hinnawey ga .....	98

0 ka koy 100 000 hinnawey (filla) .....	101
<b>Bonhawey</b> .....	105
Bayray dunbo sasawandiyan ra .....	106
Hinna cinayan misey .....	114
<b>Biibayray</b> .....	117
Zeeri siirante, sukante, kanante teeyan zuu gaaru-gaarante ga .....	118
Kaare, muulubii, kanjehinza : teeyanoo nda Cinaroo zuu gaaru-gaarante ga .....	121
Kanje bayray dunbo : kanje dumey (gorante, tersante, sotto) .....	124
Zeeri gorante, zeeri ceesante : cinayanoo zuu gaaru-gaarante ga ; cinayanoo nda zeeribundu nda kanje-gorante zeeriji .....	127
Kaare, muulubii : cinayanoo nda taabayanoo nda zeeribundu wala kanje-gorante zeeriji ; game-kuna-zeeri .....	130
Kaare, muulubii ; kanjehinza : cerawey, kanjey, boṅey .....	135
Tanjandiyan zeeri serrante ga, zuu gaaru- gaarante ra .....	139
Bii tansandiyan zuu gaaru-gaarante ga (tansandiyan) .....	143
Bii beerandiyanoo nda nga kaccandiyanoo zuu gaaru-gaarante ra .....	149
Muulu (paralelepiped) moyey, jesity nda boṅey .....	155
Kib : moyey, jesity nda boṅey .....	159
Kib : biyoo cinayanoo nda muulu biyoo cinayanoo.....	163
Kib, muulu (filla) .....	167
Silandar : tikoo, kayyanoo .....	170
<b>Neesiri</b> .....	173
Kuuyan : waafakay kuuyan kabu-izey (meetar beene taabarey nda ganda taabarey) berandiyan .....	174

Kaare nda muulubii wangari kuuyan bayray dunbo .....	180
Nooru : nooru guuru nda nooru fita .....	184
Kuntur / tiṅay waafakay tiṅay neesirey : garam beene taabarey nda ganda taabarey : berandiyan .....	188
Tooyan : waafakay neesirey (liitar beene taabarey nda ganda taabarey) berandiyan .....	193
Gayyan : han bayyan, ler (guuru) cawyan .....	197
Leesoṅ 23 <sup>ntoo</sup> bonhawey bonfeeraa .....	201
Kalima šendey .....	206
Tiirawey kaṅ gunandi .....	207

## YAAMAR

Kabu tiiraa woo kaŋ wallafandi mana tee haya se kala goyoo ma don alfagaa nda taalibey se. Woo se ir ga wiri alfagaa ga a ma goy nda yaamarey wey.

Hõ zaaroo sikka sii kaŋ kabubayray mo ga zanka lakkal feeri. Woo se alfagaa ga hima ka duu fondoyan̄ nda goyjinayyan̄ kaŋ ga cawoo doonandi hala taaliboo m'a boonay. Jiiri hinzantoo tiiraa woo mana tee kala alfagaa nda taalibey kul se ; amma alfagaa ma gaabandi taalibey masi hantum a ra. Alfagaa ma bay kaŋ cawandoo si tee kala taalibey se ; saa din ngi no ma hima ka goyoo ibeeroo tee. Nongu kaŋ i mana hin ka bisa alfagaa m'i faaba.

Jiiri hinzantoo tiiraa woo nka kaa ka jiiri jinawey kabu tiirawey (1<sup>naa</sup>, 2<sup>ntoo</sup>) saŋandi.

N.B. : Alfagaa ma bay kaŋ kabucahantaa nka jaami cawey ra. Saa kul kaŋ alfagaa ga cawandi, a ma suuba dendaney ra kaŋ goo kabucahantaa ra, wey kaŋ ga koy nga zaaroo cawoo nda taalibey lakkaley bande.

Jirbiyye 25 ra goy soolantaa ga tee kaŋ zamna dunbu hinza (3) :

- Hinnabayray
- Biibayray
- Neesiri.

Caw foo kul ga tee nda fondda woo :

- Cawboŋ
- Taasiha
- Goyjinawey
- Kabucahante
- Goyey.

- Zimamey (denden).

Dendeney ga hin ka tee taalibi foo goy wala kuray-kuray goy.

N.B. : - Boro kul ga hin ka haya kan a dii a tiiraa woo ga, har hala a ma boori ka tonton.

- Nda n'ga tiiraa woo caw, n'ga dii kalimayan kan ga hantumandi nda taka boobo (sanda zemni, zamna, zamni...). Woo man'ti albasi. Woo din ma cebe kan ir sennoo kanjey ga baa : isaboro kul ga duu nga bagaa sennoo ra kan ti nga wane.

Wa foo-nda-goy.

Wallafikey.

## Jiiri hinzantoo kabubayray goy soolantaa Hinnawey nda kabu kabilawey

1. Les nombres de 0 à 1 000 (révision) 0 ka koy 1 000 hinnawey (filla)
2. Les nombres de 1 000 à 9 999 : 1 000 ka koy 9 999 hinnawey
3. Ordre de grandeur des nombres de 1 000 à 9 999 : 1 000 ka koy 9 999 hinnawey bisaceraa
4. Addition de 2 nombres dont la somme ne dépasse pas 9 999 : technique de l'addition (sans et avec retenue), propriétés : Hinna 2 wala 3 kan tontonyanoo dimmaa si bisa 9 999 : tontonyan teeyanoo (bila lanbari wala nda lanbari) alhaaley
5. Soustraction sur les nombres jusqu'à 9 999 : sens, technique (sans et avec retenue) : Kaayan bila lanbari wala nda lanbari hinnawey ga hala 9 999 : nga maanaa nda nga teeyanoo
6. La multiplication de 2 ou 3 nombres dont le produit ne dépasse pas 9 999 : sens et propriétés : Hinna hinka wala hinna hinza kan taabaroo si bisa 9 999 : maanaa nd'alhaaley
7. Décomposition multiplicative d'un nombre : Hinna fesufesuyan taabuyan ra
8. Multiplication par 10 ou 100 ; par 20 ; 30 ; 40 ; 50 ; etc. : Technique de la multiplication (sans et avec retenue) Taabuyan nda 10 wala 100 ; nda 20 ; 30 ; 40 ; 50 nda hkh. teeyanoo bila lanbari wala nda lanbari

9. Approche de la division : multiples et diviseurs d'un nombre. Recherche de quotient exact par encadrement : **Zamna tetteyanoo ; hinna foo taabarey nda zamnakey. Zamnari ceeciyan sakuyan ra**
10. La division avec un chiffre au diviseur : sens et technique avec reste nul (quotient exact) et reste non nul : **Zamnayan kaŋ ra zamnaka ga ti kabu-ize foo, cindoo ga ti yaada (zamnaroo ga sawa) wala a si ti a.**
11. Situations relatives aux quatre opérations : **Kabu kabila taacaa misey**
12. Le nombre 10 000 : **10 000 hinnaa**
13. Ordre de grandeur sur les nombres 0 à 10 000 : **0 ka koy 10 000 hinnawey bisaceraa**
14. Situations relatives aux quatre opérations sur les nombres de 0 à 10 000 : **Kabu kabila taacaa misey 0 ka koy 10 000 hinnawey ga**
15. Les nombres de 0 à 100 000 : **0 ka koy 100 000 hinnawey**
16. Ordre de grandeur sur les nombres de 0 à 100 000 : **0 ka koy 100 000 hinnawey bisaceraa**
17. Situations relatives aux quatre opérations sur les nombres de 0 à 100 000 : **Kabu kabila taacaa misey 0 ka koy 100 000 hinnawey ga**
18. Les nombres de 0 à 1 000 000 : **0 ka koy 1 000 000 hinnawey ga**

19. Ordre de grandeur sur les nombres de 0 à 1 000 000 : **0 ka koy 1 000 000 hinnawey bisaceraa**
20. Situations relatives aux quatre opérations sur les nombres de 0 à 1 000 000 : **misey kaŋ ra kabu taacaa ga tee 0 ka koy 1 000 000**
21. Les nombres de 0 à 1 000 000 (révision) : **0 ka koy 1 000 000 hinnawey (filla)**

### **Problèmes : Boŋhawey**

22. Approche de la proportionnalité : **Bayray dunbo sasawandiyan ra**
23. Problèmes de dénombrement : **Hinna cinayan misey**

### **Géométrie : Biibayray**

24. Tracé de droites obliques, verticales horizontales sur quadrillage : **Zeeri siirante, sukante, kanante teeyan zuu gaaru-gaarante ga**
25. Carré, rectangle, triangle : tracé et construction sur quadrillage : **Kaare, muulubii, kanjehinza : teeyanoo nda cinaroo zuu gaaru-gaarante ga**
26. Notion d'angle, types d'angles (droit, aigu, obtus) : **Kanje bayray dunbo : kanje dumey (gorante, tersante, sotto)**
27. Droites perpendiculaires, droites parallèles, construction sur quadrillage, construction avec la règle et l'équerre : **Zeeri gorante, zeeri ceesante : cinayanoo zuu gaaru-gaarante ga, cinayanoo nda zeeribundu, nda kanje-gorante zeeriji**



28. Carré, rectangle : construction par pliage avec la règle et l'équerre ; axe de symétrie : **Kaare, muulubii : cinayanoo nda taabayanoo nda zeeribundu wala kanje-gorante zeeriji ; gamekuna zeeri**
29. Carré, rectangle, triangle : Côtés, sommets, angles : **Kaare, muulubii, kanjehinza : cerawey, kanjey, boŋey**
30. Symétrie par rapport à une droite sur quadrillage : **Tenjandiyan zeeri serrante ga zuu gaaru-gaarante ra**
31. Glissement de figure sur quadrillage (translation) : **Bii tansandiyan zuu gaaru-gaarante ga (tansandiyan)**
32. Agrandissement et réduction de figure sur quadrillage : **Bii beerandiyanoo nda nga kaccandiyanoo zuu gaaru-gaarante ra**
33. Pavé droit ou parallélépipède rectangle : faces (forme et nombre), arêtes, sommets : **Muulu (paralelepiped) : moyey, jesity nda boŋey**
34. Le cube : faces (formes et nombre) arêtes et sommets : **Kib : moyey, jesity nda boŋey**
35. Construction du squelette du cube et du pavé droit : **Kib : biyoo cinayanoo nda muulu biyoo cinayanoo**
36. Le cube, le pavé droit (révision) : **Kib, muulu (filla)**
37. Le cylindre : base, hauteur : **Silandar : tikoo, kayyanoo.**

## Mesures : Neesiri

38. Longueur : unités conventionnelles (multiples et sous-multiples du mètre). Conversion : **Kuuyan : waafakay kuuyan kabu-izey (meetar beene taabarey nda ganda taabarey) berandiyan**
39. Notion de périmètre du carré et du rectangle : **Neesiiri : Kaare nda muulubii wangari kuuyan bayray dunbo**
40. Monnaie : les pièces et les billets : **Nooru : nooru guuru nda nooru fita**
41. Masse : unités conventionnelles (multiples et sous-multiples du gramme). Conversion : **Kuntur /tiŋay. Waafakay tiŋay neesirey : garam beene taabarey nda ganda taabarey ; berandiyan**
42. Capacité : unités conventionnelles (multiples et sous-multiples du litre). Conversion : **Tooyan . Waafakay tooyan neesirey (liitar beene taabarey nda ganda taabarey) berandiyan.**
43. Durée : repérage d'événements, lecture de l'heure : **Gayyan : han bayyan, ler (guuru) cawyan.**

**Kabubayray : jirbiyyaa goy soolantaa : jiri hinzantoo**

Jirbiyye	Hinnawey nda kabu kabilawey	Boghawey	Bibayray	Neesiri
1	Hinnawey : 0 ka koy 1 000 (filla)		Zeeri siirante, sukante, kanante teeyan, zuu gaaru-gaarante ga	Kuuyan : waafakay kuuyan neesirey (meetar beene taabarey nda ganda taabarey) Berandiyan
2	1 000 ka koy 9 999 hinnawey		Kaare, muulubii, kanjehinza : teeyanoo nda cinaroo zuu-gaarugaarante ga	Kuuyan : waafakay kuuyan neesirey (meetar beene taabarey nda ganda taabarey) Berandiyan
3	1 000 ka koy 9 999 hinnawey bisaceraa		Kaare, muulubii, kanjehinza : teeyanoo nda cinaroo zuu gaaru-gaarante ga	Kuuyan : waafakay kuuyan neesirey (meetar beene taabarey nda ganda taabarey) Berandiyan
4	Hinna 2 wala 3 kaaj tontonyanoo dimmaa si bisa 9 999. Tontonyan teeyanoo (bila lanbari wala nda lanbari), alhaaleey		Kanje bayray dumbo, kanje dumey (gorante, tersante, sotto)	Kuuyan : waafakay kuuyan neesirey (meetar beene taabarey nda ganda taabarey) Berandiyan
5	4 (cindoo)		Kanje bayray dumbo, kanje dumey (gorante, tersante, sotto)	Wangari bayray dumbo, kaare wangari, muulubii wangari.
6	Kaayan bila lanbari wala nda lanbari hinnawey ga, hala 9 999 : nga maanaa nda nga teeyanoo		Zeeri gorante, zeeri ceesante ; cinayanoo zuu gaaru-gaarante ga, cinayanoo nda zeeribundu nda kanje-gorante neesiji	Wangari bayray dumbo, kaare wangari, muulubii wangari.
7	Hinna 2 wala hinna 3 kaaj taabaroo si bisa 9 999 : maanaa nda alhaaleey		Zeeri gorante, zeeri ceesante ; cinayanoo zuu gaaru-gaarante ga, cinayanoo nda zeeribundu nda kanje-gorante neesiji	Wangari bayray dumbo, kaare wangari, muulubii wangari.
8	Hinna fesu-fesuyan taabuyan ra		Zeeri gorante, zeeri ceesante ; cinayanoo zuu gaaru-gaarante ga, cinayanoo nda zeeribundu nda kanje-gorante neesiji	Wangari bayray dumbo, kaare wangari, muulubii wangari.

Jirbiyye	Hinnawey nda kabu kabilawey	Boghawey	Bibayray	Neesiri
9	Taabuyan nda 10 wala 100 nda 20 ; 30 ; 40 ; 50 . Teeyanoo bila lanbari wala nda lanbari		Kaare, muulubii, cinayanoo nda taabayanoo nda zeeribundu wala kanje-gorante neesiji ; gamekuma zeeri	Kuntur : waafakay kuntur neesirey (garam beene taabarey nda ganda taabarey). Berandiyan
10	Taabuyan nda 10 wala 100 nda 20 ; 30 ; 40 ; 50 . Teeyanoo bila lanbari wala nda lanbari		Kaare, muulubii, cinayanoo nda taabayanoo nda zeeribundu wala kanje-gorante neesiji ; gamekuma zeeri	Kuntur : waafakay kuntur neesirey (garam beene taabarey nda ganda taabarey). Berandiyan
11	Zemmayan alhaali hinna foo taabarey nda zermakey zemnari ceeciyan sakuyan ra		Kaare, muulubii, kanjehinza : cerawey, kanjey, bojey	Kuntur : waafakay kuntur neesirey (garam beene taabarey nda ganda taabarey). Berandiyan
12	Zemmayan kaaj ra zemmakaa ga ti kabu-ize foo, cindoo ga ti yaada (zemmaroo ga sawa wala a si ti a) : nga maanaa nda nga teeyanoo.		Tenjandiyan zeeri ga zuu gaaru-gaarante ra	Kuntur : waafakay kuntur neesirey (garam beene taabarey nda ganda taabarey). Berandiyan
13	Kabu kabila taacaa misey		Tenjandiyan zeeri ga zuu gaaru-gaarante ra	Tooyan waafakay neesirey (liitar beene taabarey nda nga ganda taabarey) Berandiyan
14	Kabu kabila taacaa misey		Bii tansandiyan : zuu gaaru-gaarante ga (tansandiyan)	Tooyan waafakay neesirey (liitar beene taabarey nda nga ganda taabarey) Berandiyan
15	10 000 hinnaa	23	Bii tansandiyan : zuu gaaru-gaarante ga (tansandiyan)	Tooyan waafakay neesirey (liitar beene taabarey nda nga ganda taabarey) Berandiyan
16	0 ka koy 10 000 hinnawey bisaceraa	23	Bii beerandiyanoo nga kaccandiyanoo zuu gaaru-gaarante ga	Tooyan waafakay neesirey (liitar beene taabarey nda nga ganda taabarey) Berandiyan
17	Kabu kabila taacaa misey 0 ka koy 10 000 hinnawey ga	32	Bii beerandiyanoo nga kaccandiyanoo zuu gaarante ga	Nooru : nooru guuru nda nooru fita

Jirbiy ye	Hinnawey nda kabu kabilawey	Boghawey	Bibayray	Neesiri
18	0 ka koy 100 000 hinnawey	22 Bayray dunbo sasawandiyan ga	33 Mulu (paralelepipedu), cerawey (alhaaloo nda hinnaa) jese y nda boŕey	40 Nooru : nooru guuru nda nooru fita
19	0 ka koy 100 000 hinnawey bisaceraa	22 Bayray dunbo sasawandiyan ga	34 Kib : cerawey (alhaaloo nda hinnaa) jese y nda boŕey	40 Nooru : nooru guuru nda nooru fita
20	Kabu kabilawey misey 0 ka koy 100 000 hinnawey ga		35 Kib : biyoo cinayanoo nda mulu biyoo cinayanoo	43 Gayyan : han bayyan, ler (guuru) cawyan
21	0 ka koy 1 000 000 hinnawey		35 35 (cindo)	43 Gayyan : han bayyan, ler (guuru) cawyan
22	0 ka koy 1 000 000 hinnawey bisaceraa	22 Bayray dunbo sasawandiyan ga (filla)	36 Kib, mulu (filla)	39 Wangari bayray dunbo, kaare wangari, mulubii wangari (filla)
23	Kabu kabilawey misey : 0 ka koy 1 000 000 hinnawey ga	23 Hinna cinayan misey (filla)	37 Silandar : tikoo, kayyanoo	41 Kuntur : waafakay kuntur neesirey (garambeene taabarey nda ganda taabarey). Berandiyan (filla)
24	0 ka koy 1 000 000 hinnawey (filla)		Filla	42 Tooyan waafakay neesirey (litar beene taabarey nda nga ganda taabarey) Berandiyan (filla)
25				

**F I L A**

# Hinnawey nda kabu kabilawey

1

0 ka koy 1 000 hinnawey (filla)

Taasiha : Taaliboo ma hin :

- ka hinnawey caw k'i hantum nda kabu-ize nda harfu ;
- ka kabu ka hun 0 ka koy 1 000 hinnawey ga ;
- ka hinna cin, ka a fesu-fesu ka hun 0 ga ka koy 1000 ga;
- ka hinnawey deedandi ;
- ka boɗhawyaɗ tee kaɗ ra kaayan nda tontonyan goo, 0 ka koy 1000 ga.

Kabu cahante :

- Wa kabu nda zangu ka hun 400 ga ka koy 900 ga, nda ka hun 900 ga ka zunbu 400 ga.
- Wa kabu nda zangu-zangu ka hun 0 ga ka koy 1 000 ga, nda 1 000 ga ka zunbu 0 ga.

Alfagaa ma nee taalibey ma dendeney nda boɗhawey wey tee.

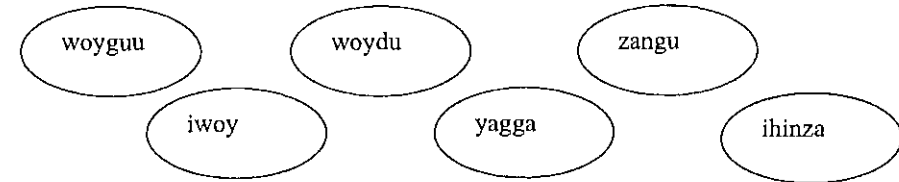
1. Wa hinnawey wey hantum nda harfu : 9 ;15 ; 84 ; 840 ; 307 ; 299 ; 538 ; 426 ; 749 ;75.
2. Wa hinnawey wey hantum nda kabu-ize :  
zangu taaci nda waranza cindi iddu  
zangu nda woytaaci ; zangu yaaha nda woyguu cindi taaci  
zangu iddu nda woydu cindi hinka  
zangu nd'itaaci ; waranka cindi hinza
3. Daaroo woo tee m'a timmandi.

84	80 + 4	iwoyboɗ 8 nda 4
786	700 + 80 + 6	.....
.....	... + ... + ...	zanguboɗ 6 nda iwoyboɗ 8 nda 1
.....	800 + 90 + 4	.....
999	... + ... + ...	.....

4. Daaroo woo tee m'a timmandi.

700	zangu iyye	7 x 100	70 x 10
....	zangu iddu	... x ...	... x ...

5. Hinnayaɗ hantum nda kalimawey wey. Wey kaɗ n'duu ey mo hantum nda harfu.



6. Tammaasaa kaɗ ga hima, hantum (< wala > wala =)

- 99... 17 ; 207 ... 402 ; 344 ... 683  
 471... 417 ; 265... 256 ; 514... 115 + 63  
 600... 400 + 200 ; 998 + 2... 1 000 ; 854.. 578 ;  
 930... 999

Boɗhaw

1. Adullaahi na mangoro ize 118 day. Mohommodu na ize 242 day. Marje ti ngi boro hinkaa mangorawey cere ra ?
2. Ali goo nda bonboɗ pake 490. A na bonboɗ pake 408 neere, Arham yooboo ra. A na bonboɗ pake 27 noo kaynoo se. Pake marje ka cindi Ali se ?
3. Abdul Aziz, Seydu nda Umar na duway-izeyaɗ kosu. Abdul Aziz na duway-ize kg 146 kosu. Seydu na kg 137 kosu. Umar na 148 kosu. Duway-ize kg marje no zankey n'i kosu ?
4. Harber goo nda kiryoɗ 334 nga bitijoo ra ; a na kiryoɗ 122 day koyne Kabara isaa mijoo ga. Kiryoɗ marje no Harber n'i day ? Kiryoɗ marje bar'a se soho ?

2

1 000 ka koy 9 999 hinnawey

**Taasiha :** Taaliboo ma hin :

- ka hinnawey caw k'i hantum nda harfu nda kabu-ize ;  
nda ka hun 1 000 ga ka koy 9 999 ga ;
- ka hinnawey cin k'i fesu-fesu ka hun 1 000 ka koy  
9 999 ga ;
- ka kabu-ize dogoo bay, wala ka kabu-izey dogey bay  
hinna ra ;
- ka hinnayan deedandi, k'i hanga-hangandi cere, 1 000 ga  
ka koy 9 999 ;
- ka hinnawey kabu ka ziji wala ka zunbu 1 000 ga ka  
koy 9 999 ga ;
- ka hinnawey kabu ka ziji wala ka zunbu 1 000 ga ka  
koy 9 999 wala 9 999 ka zunbu 1 000 ga ;
- ka bojhawyan tee.

**Kabu cahante :**

- Kabu nda woyguu-woyguu ka hun 150 ga ka koy 1000  
ga.
- Kabu nda zangu-zangu ka hun 1000 ga ka yee 200 ga.

Daarey wey berandi m'i timmandi.

+	2 000	1 000	3 000	4 000
1 000	.....	2 000	.....	.....
5 000	.....	.....	.....	.....
3 000	.....	.....	.....	.....

+	1 000	5 000	3 000	4 000
4 000	.....	9 000	.....	.....
2 000	.....	.....	.....	.....
5 000	.....	.....	8 000	.....
1 000	.....	.....	.....	.....

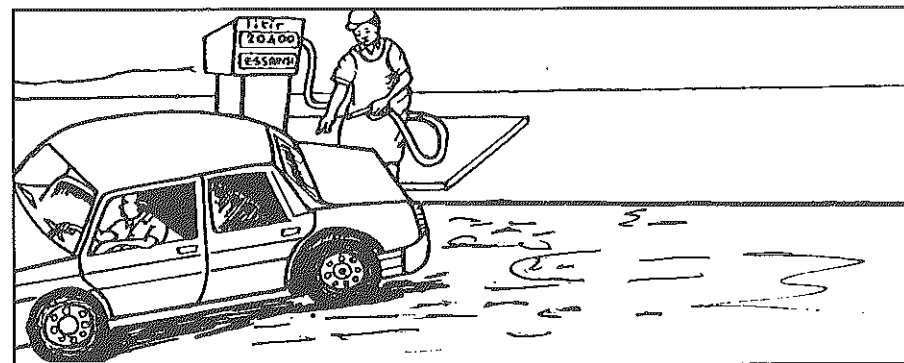
+	1 000	2 000	3 000	4 000	5 000	6 000
1 000	.....	.....	.....	.....	.....	.....
2 000	.....	.....	5 000	.....	.....	.....
3 000	.....	.....	.....	.....	.....	9 000

**Goyjinawey :** iwoybojyan, zangubojyan, daari mee hinka.

**Goyey**

**Goy jinaa :**

**Bojhaw :** Asansi neerekaw foo na liitar 1000 neere subbaahoo ra. Alaasar, a yee ka liitar 476 neere. Asansi liitar marje no a n'a neere zaaroo ra ?



Alfagaa ma bojhawoo noo taalibey se i m'a tee.  
Alfagaa ma nan taalibey m'a ceeci nda ngi boj.  
I ma takaa fahamandi kan nd'i n'a tee.

**Faham fondo :** Alfagaa m'i haa.

- Liitar marje no a n'a neere subbaahoo ra ?
- Liitar marje no a n'a neere alaasaroo ra ?
- Liitar marje no a n'a neere zaaroo kul ra ?
- Kabu dumi foo no ma tee ?

**Bojfeeray :** Fahami banda ga, kabu kabilaa woo suka. Alfagaa ma nee liitar hinnaa kan a n'a neere zaaroo ra ti :

$$1000 + 476 \qquad \qquad \qquad \begin{array}{r} 1\ 000 \\ +\ 476 \\ \hline \end{array}$$

A ma nee taalibey m'a hantum. Alfagaa ma kaboo suka, a ma tee.  
1000 + 476.

$$\begin{array}{r} 1\ 000 \\ +\ 476 \\ \hline 1\ 476 \end{array}$$

zenberboŋ			kabu-ize dooney		
za	iw	af	za	iw	af
		1	4	7	6

**Goy hinkantoo :**

Alfagaa ma nee taalibey ma hinnawey wey caw, i m'i hantum kabu-izey daaroo ra : 4215 ;3002 ; 4620 ; 5235 ; 9995.

Alfagaa ma nee taalibey ma hinna tanayan har kaŋ goo 1000 nda 9999 game.

**Denden :** Wa hinnawey wey hantum nda harfu : 8 375 ; 9 099 ; 3 609 ; 6 439 ; 2 393.

**Goy hinzantoo :** Alfagaa ma nee taalibey ma kabu-ize dogoo wala kabu-ize dogey bay hinna foo kul ra. Zenberboŋ marje bara 9 995 ra ?

**Denden :** Wa zenberboŋ nda zanguboŋ nda affowey ceeci hinnawey wey ra : 1120 ;4952 ;3680 ;5845 4760 ; 7875

**Goy taacantoo :**

Alfagaa ma nee taalibey ma laasaabu :

5 235 = 5 000 + 200 + 30 + 5 wala

$$= (5 \times 1000) + (2 \times 100) + (3 \times 10) + 5$$

Kabu : 3 000 + 700 + 15 = ....

7 000 + 200 + 20 = ...

1 000 + 400 + 90 + 2 = ...

5 000 + 50 = ...

2 009 + 700 = ...

6 000 + 800 + 8 = ...

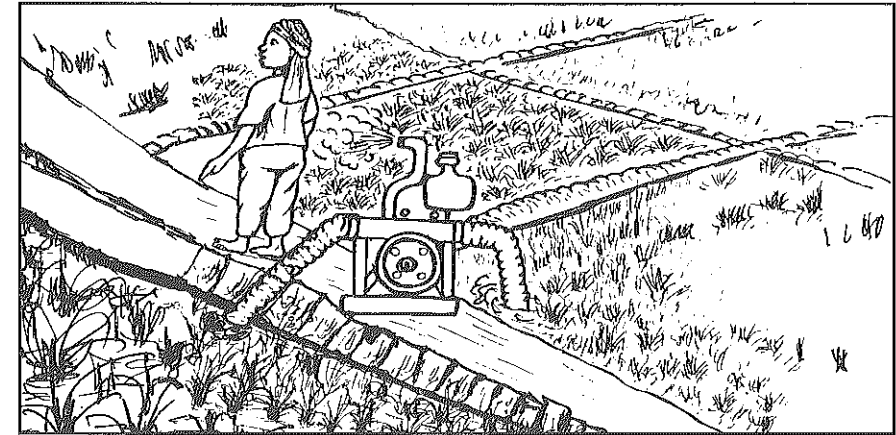
**Denden :** Hinnawey wey fesu-fesu nda taka follokaa 4 760 ; 8 750 ; 9 705 ; 3 460 ; 6 285.

**Goy guwantoo :**

**Bonhaw :** Ali na nga Taasiga faaroo haŋandi atinnoo hane nda hari liitar 4 763.

Atalaataa hane, motoponpoo na liitar 4 809 hari jindaw faaroo ra. Alarbaa hane, a na liitar 6 547 dam.

Zaari foo haŋandoo ka bisa zaarey kul ?



Alfagaa ma nee taalibey ma zaaboo hantum hinnawey daaroo ra.

zenberboŋ			kabu-ize dooney		
za	iw	af	za	iw	af

- Alfagaa ma nee taalibey ma atinnoo nd'atalaataa hari liitar hinnawey deedandi.
- Alfagaa ma nee taalibey ma hinnawey wey hanga-hangandi cere (1 4 763 ; 1 4 809 ; 1 6 547).

**Goy idduwantoo :**

Alfagaa ma nee taalibey ma hinnawey wey hantum, i m'i deedandi nda : > ; < ; =

Sanda : 365 goo nda kabu-ize 3

47 goo nda kabu-ize 2

Saa din 365 > 47

Nda n'ga deedandi tee, n'ga jin ka zanguboney deedandi nd'i ga sawa. N'ga yee k'iwoybonoy deedandi nd'i ga sawa ; n'g'affowey deedandi.

**Denden** : Hinnawey wey deedandi.

5 346 nda 5 270 ; 4 299 nda 4 999 ;  
1 270 + 1 730... 3 000.

**Goy iyyantoo** :

Alfagaa ma nee taalibey ma kabu nd'iwoy-woy, nda zangu-zangu, nda zenber-zenber, 1 000 ka koy 9 999 ga wala 9 999 ka zunbu 1 000 ga.

**Denden**

1. Hinna hinza kan affoo kul goo nda iwoybon 367 ceeci m'i hantum.
2. Hinna hinza ceeci m'i hantum kan affoo kul goo nda zangubon 15.
3. Hinnawey wey berandi m'i timmandi nda  $<$  ;  $=$  ;  $>$  :  
2 407 .... 2 300  
789 .... 483  
399 .... 789  
834 .... 8 904  
278 .... 278
4.
  - a) Hinnawey wey hantum ka hun ikaccaa ga ka koy iberoo ga ;  
4 397 ; 8 739 ; 2 488 ; 934 ; 1 789 ; 99.
  - b) ka hun iberoo ga ka zunbu ikaccaa ga :  
8 947 ; 9 994 ; 399 ; 6 015 ; 9 999 ; 7 800.
5. Duu hinnawey kul ikaccaa nda ngi kul iberoo kan ga hin ka hantumandi nda kabu-izey wey 6, 1, 8 taka kan ra affoo kul si filla.

6. Hinna fooyan ne : 3 487 ; 7 843 ; 2 798 ; 9 834 ;  
3 789 ; 2 789 ; 7 834.

- a) Hinnawey hantum kan kacca nda 4 379,
- b) Hinnawey hantum kan bisa 4 379,
- c) Hinnawey hanga-hangandi cere, ikaccaa ka koy iberoo ga.

7. Kamiyon foo ga hin ka kilo 9 900 jinay sanbu. I na gaari kilo 7 500 nda sukar kilo 450 dam a ra. Jinay kilo marje no ma hin ka huru koyne kamiyonoo ra ?

8. Maamalakaw foo na sukar kilo 5 300 neere subbaahoo ra. Alaasaroo ra, a na kilo 4 600 neere. Sukar kilo marje no maamalakaa n'a neere zaaroo ra.

9. Faatuma duu k 6 850 nga leemurey ra bi. Ho zaaroo, a duu k 2 150. Kaatibi marje no Faatuma duu nga leemurey kul daymaa ra ?

## 1 000 ka koy 9 999 hinnawey bisaceraa

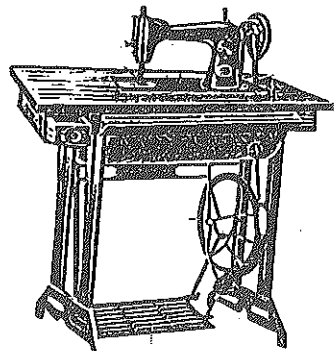
**Taasiha :** Taaliboo ma hin :

- ka hinnayan deedandi kaŋ goo nda kabu-ize taaci zenberboŋ hinka ra ;
- ka hinnawey kaŋ goo nda kabu-ize taaci hanga-hangandi cere bande ka hun ikaccaa ga ka ziji ibeeroo ga nda ka hun ibeeroo ga ka zunbu ikaccaa ga ;
- ka hinna saku nda zenberboŋ hinka ;
- ka hinna sasawandi iwoyboŋ, zanguboŋ nda zenberboŋ manay ga.

**Kabu cahante :**

- Kabu nd'iwoy-woy :
  - a. ka hun 100 ka koy 600 ;  
ka hun 600 ka yee 100 ;
  - b. ka hun 600 ka koy 1000 ;  
ka hun 1000 ka yee 600.

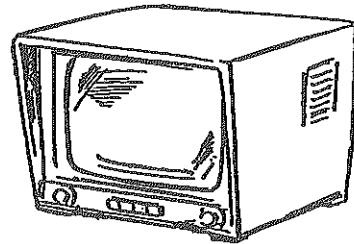
**Goyjinawey :** Zenberboŋ, zanguboŋ nd'iwoyboŋ nda daari mee hinka.



k : 7 500



k : 4 500



k : 7 800

Alfagaa ma nee taalibey ma jinawey wey affoo kul hayoo laasaabu.

**Faham fondo :** Alfagaa m'i hãa :

- jinay foo hayoo ma faala nd'i kul ?
- jinay foo hayoo ma šendi nd'i kul ?

**Bonfeeray :**

Zenberboŋ 4 < zenberboŋ 7

Saa din 4 500 < 7 800. Woo ti, montaraa hayoo kaŋ ti 4 500 no ma faala.

Sohõ 7 500 nda 7 800 zenberboŋey ga sawa. Saa din ir ma zanguboŋey deedandi :

zanguboŋ 5 < zanguboŋ 8

saa din 7 800 > 7 500

woo ti biibataa hayoo šendi nda taa marsinoo hayoo, nda montaraa mo hayoo.

4 500 < 7 500 < 7 800

Nda boro ga hinnawey kaŋ goo nda kabu-ize taaci deedandi, n'ga jin ka zenberboŋey deedandi, ka duu ka zanguboŋey deedandi, ka filla k'iwoyboŋey deedandi jina m'affowey deedandi.

Sanda :

9 530 > 8 570

8 570 > 8 290

saa din 9 530 > 8 570 > 8 290

8 290 < 8 570 < 9 530

**Denden :** Tammaasaa woo < dam ka hinnawey deedandi nda a ga hin ka tee.

9 600 nda 9 060 ;

2 800 nda 2 840 ;

7 570 nda 7 050.

**Goy hinkantoo :** Taalibey ma hinnawey wey laasaabu, i m'i hanga-hangandi cere, ikaccey ka koy ibeerey ga nda ibeerey ka yee ikaccey ga.

8 670

1 895

4 320

8 330

8 760

1 035.

**Faham fondo :**

I ga jin nda hinnawey kaŋ zenberboŋey ga kacca. Nda zenberboŋey ga sawa, i ga wey kaŋ zanguboŋey ga kacca zaa.



Nda ngi mo zangubonɛy ga sawa, i ga wey kaɲ iwoybonɛy ga kacca zaa. Takaa woo da, ka hun hinna kaccey ga, ka ziji hinna beerey ga, ka yee hinna kaccey ga. Saa din, zenberbonɛy beerey wala zangubonɛy beerey wal'iwoybonɛy beerey ma zaandi ka sawandi sanda :

- a. 1 432            1 833            1 867            1 890  
      2 876        nda 6 035  
 b. 6 035            2 876            1 890            1 867  
                      1 833            nda            1 432

**Denden :** Wa hinnawey kaɲ ga bisa 6 750 hantum, war m'i hanga-hangandi cere bande hala 7 712 ga.  
 Wa duu hinnawey kaɲ kacca nda 7 712 ka zunbu 6 750, w'i hantum k'i hanga-hangandi cere.

**Goy hinzantoo :** Taalibey ma laasaabu :

$$1\ 350 < 1\ 351 < 1\ 360$$

$$1\ 350 < 1\ 358 < 1\ 360.$$

Saa din 1 351 ga man 1 350  
 1 358 ga man 1 360.

Woo ti ir na 1 351 toondi nga sasawandoo ga kaɲ ti 1 350 ;  
 1 358 sasawandoo mo ti 1 360.

**Denden :** Hinnawey wey affoo kul saku ma duu ngi sasawandoo iwoybonɛy manantaa.

$$3\ 664 \dots 378 ; 1\ 271 \dots 3\ 275 ;$$

$$2\ 094 \dots 1\ 995.$$

**Goy taacantoo :**

Taalibey ma laasaabu :

$$2\ 132 + 4\ 267$$

2 000 ti 2 132 sasawandi manantaa zenberbonɛy ga.

4 000 ti 4 267 sasawandi manantaa zenberbonɛy ga.

saa din :  $2\ 132 + 4\ 267$  sasawandi manantaa zenberbonɛy ga ti  
 $2\ 000 + 4\ 000 = 6000$  kaɲ ti hinnaa bisaceraa zenberbonɛy manay ga.

Taalibey ma fonda cebe kaɲ nd'i hin ka laasaaboo woo tee :

Nda n'ga sasawandiyan tee iwoybonɛy, zangubonɛy wala zenberbonɛy ga ni mma iwoybonɛy wala zangubonɛy wala zenberbonɛy manantaa zaa ka duu dimmaa.

**Denden :** Hinnawey wey sasawandi iwoybonɛy wala zangubonɛy wala zenberbonɛy manay ga ka duu ngi dimmaa :

$$1\ 247 + 4\ 780 ; 2\ 402 + 2\ 289 ;$$

$$1\ 114 + 1\ 578 ; 2\ 312 + 2\ 627 ;$$

$$2\ 711 + 2\ 370.$$

**Denden**

1. Tammaasaa woo < wala woo > dam :

$$3\ 146 \dots 3\ 649 ; 5\ 490 \dots 5\ 409 ;$$

$$6\ 501 \dots 7\ 510 ; 8\ 224 \dots 8\ 214 ;$$

$$2\ 666 \dots 1\ 866 ; 3\ 900 \dots 3\ 990.$$

2. Sasawandi iwoybonɛy wala zangubonɛy wala zenberbonɛy manay ga  
 9 128 ; 8 541 ; 6 870 ; 9 798 ;

3. Zuwoo woo berandi ni tiiraa ga m'a timmandi nda hinnawey kaɲ ga hima :

		5000				8000		9000		
--	--	------	--	--	--	------	--	------	--	--

$$5011 \quad 8500 \quad 1080 \quad 9090 \quad 5720$$

$$9990 \quad 1810 \quad 5120$$

4. Dimmaa sasawandi iwoybonɛy wala zangubonɛy wala zenberbonɛy manay ga.

$$1\ 789 + 6\ 950$$

$$1\ 748 + 6\ 245 ; 1\ 170 + 1\ 720$$

$$5\ 284 + 1\ 425 ; 2\ 442 + 5\ 418 ;$$

$$4\ 326 + 3\ 295.$$

5. Janbu koy foo duu nga konbitarey neereroo ra k 7 235, nga daymaa sasawandi iwoybonɛy wala zangubonɛy wala zenberbonɛy kaɲ ga man a ga.

6. Boro hinza na hawayan deɲandi Koriome. Boro jinaa na haw bonɛy 3 541 deɲandi. Boro hinkantoo na 2 563 deɲandi, ihinzantoo na 1 345 deɲandi.

Duu hawey kul kaɲ deɲ, dimmaa.

Dimmaa sasawandi iwoybonɛy wala zenberbonɛy kaɲ ga man a ga.

## Hinna 2 wala 3 kaɗ tontonyanoo dimmaa si bisa 9 999 : tontonyan teeyanoo (bila lanbari wala nda lanbari) alhaaley

**Taasiha :** Taaliboo ma hin :

- ka mise booboyaɗ tee kaɗ ra tontonyan goo ;
- ka tontonyan alhaaley ka goy ka duu dimmayaɗ ;
- ka tontondaaroo ka goy ;
- ka kabu dumey suka, a m'i tee tontonyan ra ;
- ka duu tontondaaroo ra hinnaa kaɗ ga kuma.

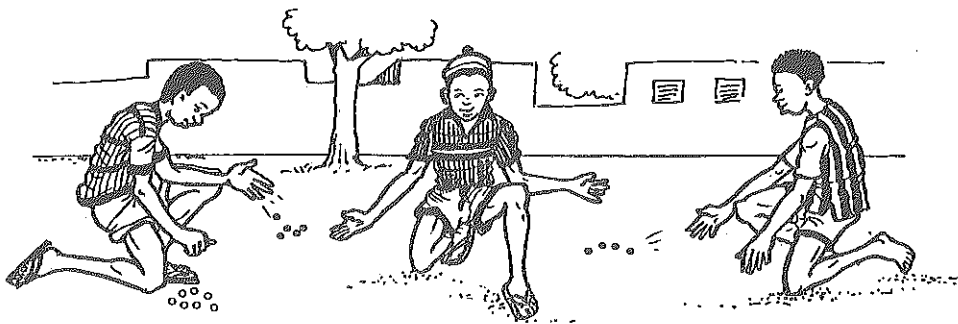
**Kabu cahante :**

- kabu nd' ihinza-hinza ka hun 0 ka koy 100 ;
- ka hun 100 ka yee 0 ;
- ka hun 30 ka koy 90 ;
- ka hun 90 ka yee 30.

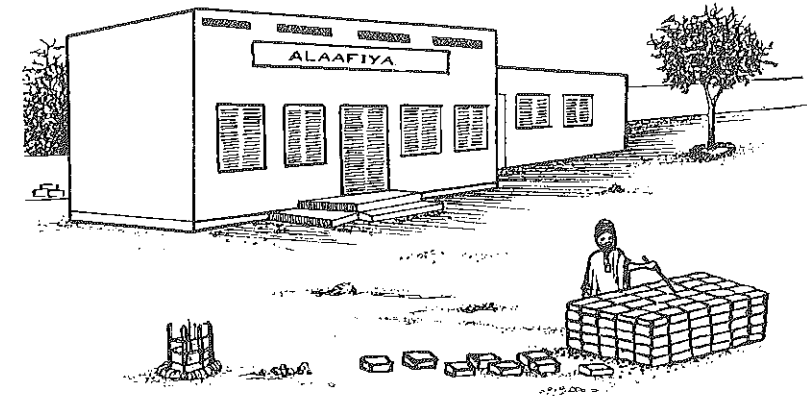
**Goyjinawey :** feraw, wali-ize, teenay guli, tontondaaroo.

**Goyey**

**Goy jinaa :**



Alfagaa ma nee taalibey ma zanka hinzaa woo guley hinnaa hantum nda tontonyan, i ma kaboo tee.



Honbori lokkoloo duu feraw 1005 nga horaa ra ; koyraa zankey n'a noo feraw 1007 ; lokkoloo hunday na feraw 1004 kar.

Alfagaa ma nee taalibey ma feraw hinnaa kaɗ lokkol hugoo duu ey, kabu. Honbori lokkoloo duu feraw 1005, a yee ka duu feraw 1007, a na 1004 kar k'a tonton ijinawey ga.

**Faham fondo :** Alfagaa m'i haa.

Feraw marje bara Honbori lokkoloo se ? Wa hinnaa hantum nda tontonyan sii hinkaa.

W'a hantum walhabeeroo ga.

**Bonfeeray :**

Ferawey kaɗ Honbori lokkoloo duu ey ti :

$$1005 + 1007 \text{ wala } 1007 + 1005$$

Ferawey kul kaɗ goo lokkoloo se, hinnaa ti :

$$1007 + 1005 + 1004 = 1004 + 1007 + 1005$$

**Goy hinkantoo :**

Alfagaa ma nee taalibey ma duu dimmawey wey  $1007 + 1005$  nda  $1005 + 1007$ .

Taalibey ma laasaabu kaɗ wala nda kabu-izey bere-bere cere se woo din si dimmaa barmay  $(1900 + 1400) + 1300 =$

$$\begin{aligned} & 1900 + (1400 + 1300) \\ & (1600 + 1400) + 100 \dots + (\dots + 1000) \\ & 2500 + (1080 + 4200) \\ & (\dots + 1080) + 4200 \end{aligned}$$

**Goy hinzantoo :**

Alfagaa ma duu boɗhaw booboyaj kaɗ ra hinna hinka wala ihinza ga tonton cere ga, sanda :

- Jlaamoy na leemur-ize 1700 nda mangoro 2100 neere Baani kan yooboo ra. Tuuri-ize marje no Jlaamoy n'a neere ?

**Goy taacantoo :**

Alfagaa ma kabey wey hantum walhabeeroo ga, taalibey m'i timmandi.

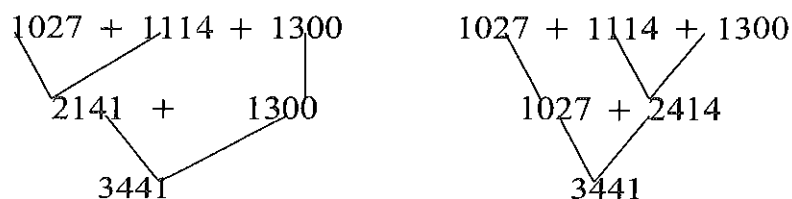
$$1110 + \dots = 2215$$

$$2875 + \dots = 3438 \dots + 2782 = 3118$$

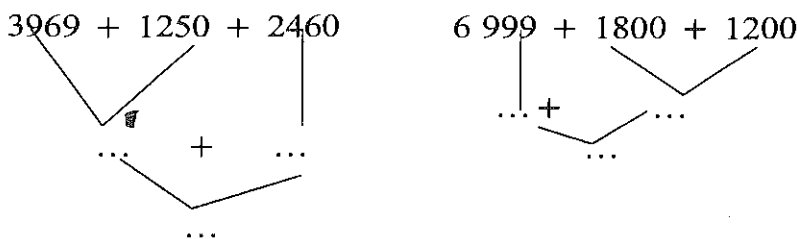
$$1156 + \dots = 3182 \dots + 1128 = 1780.$$

**Goy guwantoo :**

Kabu nda tontonyan dumi booboyaj sanda :



Wa wey timmandi.



**Goy idduwantoo :**

Alfagaa ma tontondaaroo woo tee walhabeeroo ga.

+	0	1000	2000	3000	4000
0	0	...	2000	...	...
1000	...			4000	...
2000	...				...
3000	...				
4000					

\* boɗ dobukaw : diagonale

A ma nee taalibey m'a timmandi.

A ma nee i ma boɗ dobukaw\* tee daaroo ra. Nda daaroo timme, alfagaa ma 0 dogoo laasaabandi tontonyan ra sanda :

$$0 + 3000 = 3000 + 0$$

Hugey kaɗ ga tenji nda boɗ dobukaw ka hun 0 ka koy 8000 ga, goo nda hinna follokey kaɗ duwandi nda taka hinka, sanda

$$4000 = 3000 + 1000$$

$$4000 = 1000 + 3000$$

**Goy iyyantoo :**

Alfagaa ma nee taalibey ma 4700 tonton 2600 ga. I ma zenberboɗ, nda zanguboɗ, nd'iwoyboɗ nda affowey hantum daaroo ra :

zenberey			kabu-ize dooney		
za	iw	af	za	iw	af

Alfagaa ma nee taalibi foo ma serrandoo tee walhabeeroo ga.

$$\begin{array}{r} 4\ 700 \\ + 2\ 600 \\ \hline 7\ 300 \end{array}$$

Alfagaa ma taalibey fahamandi tontonyan kaɗ goo nda lanbari, teeyantoo.

Affowey sorraa ra, 0 kaɗ tonton 0 ga ga sawa nda 0 ;  
iwoyey sorraa ra, 0 kaɗ tonton 0 ga ga sawa nda 0 ;  
zangey sorraa ra, 7 ma tonton 6 ga ; 3 ma hantumandi  
zangey sorraa ra, ma zanguboɗ faa lanba k'a tonton  
zenberey ga.

Zenberboɗ foo kaɗ tonton 4 ga, kaɗ tonton 2 ga, ga sawa nda7.

**Denden :** Mise follokaa no boro g'a tee nda ni sintin nda kabu-ize fooyaj kaɗ mana ti yaada.

**Denden :** Hinnawey wey tonton cere ga.

$$\begin{array}{r} 1132 \quad 1226 \quad 1143 \quad 2153 \quad 2957 \\ + 1286 \quad + 1379 \quad + 1152 \quad + 1106 \quad + 2420 \\ \hline \end{array}$$

## Denden

1. Kabey wey tee.

$$\begin{array}{r} 4430 \\ + 3350 \\ \hline \end{array} \quad \begin{array}{r} 5750 \\ + 2260 \\ \hline \end{array} \quad \begin{array}{r} 6890 \\ + 2780 \\ \hline \end{array} \quad \begin{array}{r} 1800 \\ + 3100 \\ + 4000 \\ \hline \end{array}$$

$$\begin{array}{r} 3266 \\ + 666 \\ + 4522 \\ \hline \end{array} \quad \begin{array}{r} 2133 \\ + 1111 \\ + 4888 \\ \hline \end{array}$$

2. Kabey wey suka m'i tee

$$\begin{array}{r} 4220 + 3600 \\ 2240 + 7440 \\ 1230 + 1140 + 4280 \\ 6530 + 1500 + 1270 \\ 2270 + 5410 \end{array} \quad \begin{array}{r} 4450 + 3210 \\ 2280 + 3790 \\ 1620 + 1180 + 1040 \\ 9000 + 3810 + 2000 \\ 4580 + 3880 \end{array}$$

3. Kabey wey timmandi.

$$\begin{array}{r} 1135 \\ + \dots \\ \hline 6770 \end{array} \quad \begin{array}{r} 5635 \\ + \dots \\ \hline 8807 \end{array} \quad \begin{array}{r} \dots \\ + 1300 \\ \hline 2700 \end{array} \quad \begin{array}{r} 1128 \\ + \dots \\ \hline 1960 \end{array} \quad \begin{array}{r} \dots \\ + 4600 \\ \hline 7350 \end{array}$$

## Bonhaw

- Saareyaamu taalibey duu lokkol sardiṇaa ra korooti 3370 obital se. I na korooti 2560 dogu ngi kantinoos se. Korooti marje ka hun sardiṇaa ra ?
- Kabara bangoo ra, Siidi goo nda haw bon 1537, feeji bon 6391, hancin bon 1470. Marje ti Siidi almaaney kul cere ra ?
- Bintagungu woyey kondaa na konbitar kg 1860 neere subbaahoo ra. Wiciroo ra otel koy foo na konbitar kg 1656 day i ga. Ceroo mo na konbitar kg 1611 day. Kg marje no woyey kondaa n'a neere zaaroo ra ?
- Hamsatu na k 2100 ka day-day nga hoyandoo se. Bookar Talfi na k 6600 ganjiham day a se, zankey na k 1225 takula day a se. Kaatibi marje ka huru hoyandoo almusakkawey ra ?

## 5 Kaayan bila lanbari wala nda lanbari hinnawey ga hala 9 999 : nga maana nda nga teeyanoo

Taasiha : Taaliboo ma hin :

- ka mise booboyan tee kan ra kaayan goo ;
- ka hayaa kan goo tontonyan nda kaayan game laasaabu ;
- ka hinna hinka zilay\* ;
- ka kabu dumey suka, a m'i tee kaayan ra ;
- ka bonhawyan tee kan ra kaayan goo.

Kabu cahante :

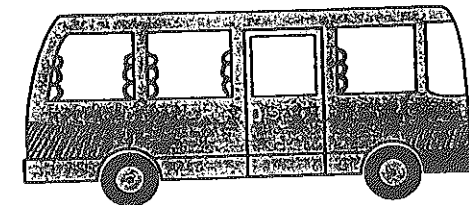
Kabu nd'iwoy-woy :

- 120 ka koy 180 ga  
180 ka yee 120 ga
- 300 ka koy 350 ga  
350 ka yee 300 ga

Goyjinawey : guli, wali-ize, kangaw-ize, teenay guli, bonhawyan.

Goyey

Goy jinaa :



Bonhaw : Gorodoo 15 goo kar kaccu foo ra. Kan a ga tun Tunbutu, boro 8 bar'a ra. Gorodoo marje ka cindi ?

\* ka zilay = ka fay, ka waani-waani

**Faham fondo :** Alfagaa m'i haa :

- Gorodoo marje bara kaaroo ra ?
- Kañ kaaroo ga tun, gorodoo marje ra boro goo ?
- Wa gorodogey hinnaa kañ cindi ceeci nda kabu dumey kul kañ war g'i bay.

**Bonfeeray :**  $8 + \dots = 15$  ; saa din  $15 - 8 = \dots$

Alfagaa ma taalibiyañ sanba walhabeeroo ga, i ma serrandoo tee. A ma serrandey kañ ra kaayan tammaasaa goo, suuba.

**Goy hinkantoo :**

Alfagaa ma nee taalibey ma bonhawey tee :

- Boro 115 huru Goosi sinima hugu foo ra ; kañ filim jinaa ga ben, boro 87 fatta. Boro marje ka cindi ?
- Fondo foo bon, n'na ceedaaru 45 tee ka koy jine here. Ni filla ka yee ni cee bandey ra nda ceedaaru 10. Ceedaaru marje bara ni nda tun doo jinaa game ? Ni bonfeeraa zaaboo fasal.

**Goy hinzantoo :**

Laasaabu :  $8 + 9 = 17$  saa din  $17 - 8 = 9$

Hinnawey wey timmandi nda mise follokaa :

- $6 + \dots = 13$  saa din  $\dots = \dots$
- $24 + \dots = 57$  saa din  $\dots = \dots$
- $12 + \dots = 20$  saa din  $\dots = \dots$
- $\dots + 18 = 35$  saa din  $\dots = \dots$
- $7 + 18 = 15$  saa din  $\dots = \dots$

**Denden :**

Hinnawey wey timmandi nda mise follokaa

- $5 + 6 = 11$  ;  $11 - \dots = 6$  ;  $11 - \dots = 5$
- $9 + 9 = \dots$  ;  $\dots - 10 = 9$  ;  $\dots - 9 = \dots$

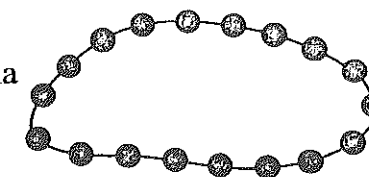
**Denden :** Daaroo berandi m'a timmandi.

hinnawey	deedandiyan	kaayan
7 nda 10	$10 > 7$	$10 - 7 = 3$
16 nda 8	... ..	... ..
5 nda 12	... ..	... ..
40 nda 20	... ..	... ..

**Goy taacantoo :**

**Bonhaw** : Aminata goo nda k 1765.

A na hiiri foo day kañ hayoo ga sawa nda k 740. Marje ma cindi Aminata se ?  
Alfagaa ma nañ taalibey ma bonhawoo tee ngi bon se.



**Faham fondo :**

- Kaatibi marje bar'Aminata se ?
- Marje ti hiiroo hayoo ?
- Kaatibi marje ka cindi dayyanoo bandaa ga ?

Alfagaa ma nee taalibey ma kabu dumoo woo tee.

a. Tontonyan

$$\begin{array}{r} 1765 \\ - 740 \\ \hline 1025 \end{array} \quad +$$

- Marje no ma tonton 0 ga ka duu 5 ?
- Iwoybonney sorraa ra, marje ma tonton 4 ga ka duu 6 ?
- zangubonney sorraa ra, marje ma tonton 7 ga ka duu 7 ?
- zenberbonney sorraa ra, marje ma tonton 0 ga ka duu 1 ?

b. Kaayan :

Affowey sorraa ra : 5 kañ ra 0 hun wala

0 kañ hun 5 ra = 5 ; ma 5 hantum.

- Iwoybonney sorraa ra : 6 kañ ra 4 hun wala 4 kañ hun 6 ra ti 2 ; ma 2 hantum.

$$\begin{array}{r} 1765 \\ - 740 \\ \hline 1025 \end{array}$$

Zanguboney sorraa ra : 7 kaŋ ra 7 hun  
 wala 7 kaŋ hun 7 ra ga sawa nda 0 ; ma 0 hantum.  
 Zenberboney sorraa ra : 1 kaŋ ra 0 hun wala 0  
 kaŋ hun 1 ra ti 1 ; ma 1 hantum.  
 Ni ma duu 1025.

**Goy guwantoo :**

**Bonhaw :** Yehiya Alkaaya lokkoloo goo nda lokkol-ize 568.  
 Lokkol-ize 273 goo Bahadu lokkoloo ra. Lokkol-ize marje nda  
 lokkol faa bisa hangasinoo ?  
 Alfagaa ma naŋ taalibey ma ceeci nda ngi boŋ i ma takaa  
 fahamandi kaŋ nd'i na tee.

**Bonfeeraa :**

a. N'ga hin ka jin ka hinnaa ceeci kaŋ ga hima ka tonton 273 ga  
 hala ma duu 568. Woo din ma kate ma tontonyan tee.  
 $273 + \dots = 568$

$$\begin{array}{r} \textcircled{1} \\ 568 \\ - \textcircled{1} 273 \\ \hline 295 \end{array}$$

b. Affowey sorraa ra :

$$8 - 3 = 5$$

- Iwoyboŋey sorraa ra :

$$6 - 7 ; \text{ ni si hin ka woo din tee.}$$

N'ga zangubonŋ foo tonton wala iwoyboŋ 10 iwoyboŋ 6 ga ka duu  
 16 :

$$16 - 7 = 9$$

Zanguboney sorraa ra : n'ga zangubonŋ foo tonton zangubonŋ 2 ga  
 ka duu zangubonŋ 3 ;  $5 - 3 = 2$ .

c. Affowey sorraa ra

$$8 - 3 = 5$$

iwoyboŋey sorraa ra

$$6 - 7 ; \text{ ni si hin ka woo tee.}$$

$$\begin{array}{r} \textcircled{1} \\ 568 \\ - \textcircled{4} 273 \\ \hline 295 \end{array}$$

N'ga zangubonŋ foo wala iwoyboŋ 10 hii zangubonŋ 5 ga kaŋ n'g'i  
 tonton iwoyboŋ 6 ga ka duu iwoyboŋ 16. Zangubonŋ 4 ma cindi  
 $16 - 7 = 9$ .

Zanguboney sorraa ra :  $4 - 2 = 2$

**Denden : Kabey wey tee.**

$$\begin{array}{r} 324 \quad 245 \quad 264 \quad 563 \quad 817 \\ - 38 \quad - 53 \quad - 129 \quad - 86 \quad - 259 \\ \hline \end{array}$$

**Denden**

1. Kabey wey tee.

$$\begin{array}{r} 894 \quad 508 \quad 972 \quad 494 \quad 162 \quad 545 \\ - 536 \quad - 120 \quad - 466 \quad - 248 \quad - 113 \quad - 36 \\ \hline \end{array}$$

$$\begin{array}{r} 450 \quad 872 \quad 286 \quad 455 \\ - 280 \quad - 281 \quad - 119 \quad - 96 \\ \hline \end{array}$$

2. Hinnawey timmandi.

$$\begin{array}{r} 847 \quad 742 \quad 807 \quad 503 \quad \dots \\ - \dots \quad - 549 \quad - \dots \quad - \dots \quad - 615 \\ \hline \end{array}$$

$$415 \quad 17 \quad 217 \quad 402$$

3. Hinnawey wey suka ma kaboo tee

$$614 - 136 ; 963 - 417 ; 524 - 328 ; 527 - 387 ; \\ 603 - 52 ; 472 - 256 ; 458 - 78 ; 307 - 112 ; \\ 312 - 216 ; 410 - 335$$

4. Hinnawey timmandi.

$$\begin{array}{r} 1\ 728 \quad 2\ 905 \quad 3\ 056 \quad \dots \\ - 29 \quad - \dots \quad - 2\ 008 \quad - 842 \\ \hline \dots \quad 1\ 050 \quad \dots \quad 7\ 242 \end{array}$$

## Bonhaw

5. Moobil zurandi kitaabu foo hayoo ti k 725. Dedem na k 800 noo neerakaa se. Marje no neerakaa g'a yeeti Dedem se ?
6. Naana goo nda hina kitaabu kaŋ moo 1670 bar'a ra. Aysata wanoo goo nda moo 1380. Moo marje nda kitaabu hinkaa ga bisa cere ?
7. Kadiija koy Yoobutaawo nda k 1000. A na k 450 ham day, k 225 tuuri-ize nda k 160 day-day. Kaatibi marje ma cindi Kadiija se ?
8. Kabu-ize hinza ne : 6,4 nda 7.  
Duu hinnawey kul kaŋ kabu-ize hinza g'i hantum, amma kabu-ize foo kul masi hantumandi cee hinka.  
Duu bisaceraa kaŋ goo hinna beeroo nda hinna kaccaa game.

6

## Hinna hinka wala hinna hinza kaŋ taabaroo si bisa 9 999 : maanaa nd'alhaaley

Taasiha : Taaliboo ma hin :

- ka miseyaŋ tee taabuyan ra ;
- ka hayaa bay kaŋ goo taabuyan hantum nda tontonyan hantum game ;
- ka taabuyan alhaaley ka goy miseyaŋ ra.

## Kabu cahante

Wa kabu dumey wey timmandi :

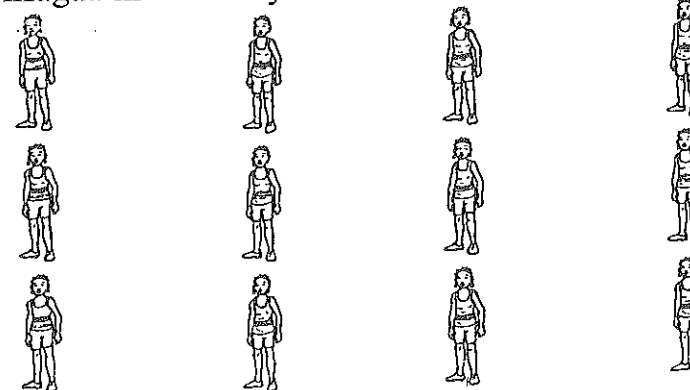
$$\begin{array}{lll} 400 + 200 ; & 600 + 300 ; & 700 + 400 ; \\ 1\ 200 + 35 ; & 3\ 400 + 45 ; & 5\ 700 + 55 ; \\ 322 \times 3 ; & 42 \times 4 ; & 538 \times 5. \end{array}$$

Goyjinawey : Jinawey kaŋ ga hin ka goyoo tee.

## Goyey

Goy jinaa :

Alfagaa ma taalibey teteri cere bande.



A ma taalibey tonton cere ga nda soofu-soofu ka duu ngi hinnaa.  
A ma yee ka taalibey sorra-sorra ka duu ngi hinnaa.  
Tontonyan foo kul barmay m'a tee taabuyan.  
Alfagaa ga nee taalibey ma zankey hinnaa hantum bila i m'i kabu.  
Taalibey ma ngi goyey jerey hantum walhabeeroo ga sanda :  
 $3 + 3 + 3 + 3$  wala  $4 + 4 + 4$ .

Tontonyaney ga hin ka ti :  $3 \times 4$  wala  $4 \times 3$   
 Taalibey ma nee  $4 \times 3 = 12$  wala  $3 \times 4 = 12$ .  
 Alfagaa ma nee  $4 \times 3$  wala  $3 \times 4$  wala 12 ti 3 nda 4 taabaroo.

**Goy hinkantoo :**

Alfagaa ma nee taalibey ma woo tee sanda :  $6 + 6 + 6 + 6$ .  
 I ma duu hinnaa  $6 + 6 + 6 + 6 = 24$ . I ga filla k'a hantum nda taabuyan sanda  $6 \times 4$ .

Alfagaa ma nee taalibey ma woo tee sanda :  $4 + 4 + 4 + 4 + 4 + 4$ , i ma duu dimmaa  $4 \times 6$ .

Taalibey ga yee goyoo ga walhabeeroo ga sanda  $6 + 6 + 6 + 6 = 6 \times 4 = 24$   
 $4 + 4 + 4 + 4 + 4 + 4 = 4 \times 6 = 24$

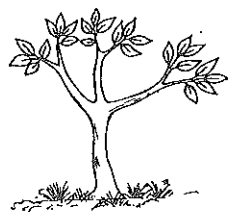
**Goy hinzantoo :**

Alfagaa ga willi goyoo ga nda hinna tanayan sanda :  $33 + 33 + 33$ .  
 $77 + 77 + 77 + 77$   
 $127 + 127 + 127 + 127$   
 $612 + 612 + 612 + 612 + 612$   
 $23 + 7 + 6 + 23$ .

**Denden**

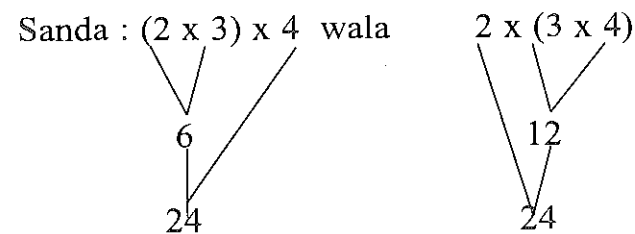
Dimmawey wey bere k'i tee taabari nd'a ga hin ka tee.  
 $73 + 73 + 73 + 73$   
 $103 + 103 + 103 + 103$   
 $11 + 23 + 5 + 2$ .

**Goy taacantoo :**



Tuuri kayfantaa woo goo nda kanbe 3. Kanbe foo kul goo nda kanbe-ize 2. Kanbe-ize foo kul goo nda fita 4.

Fitawey hinnaa hantum nda taabuyan dumi hinka :



**Goy idduwantoo :** Alfagaa ma miseyan cebe taalibey se kan ra tontonyan nda taabuyan ga marga sanda :  $(7 + 4) \times 6$ . Alfagaa ma nee taalibey ma taabaroo tee.

A ma nan i m'a ceeci, i m'a hantum walhabeeroo ga.  
 Alfagaa ma taalibey zaabi fooyan hantum walhabeeroo ga  
 sanda :  $(7 \times 6) + (4 \times 6) = 66$   
 $11 \times 6 = 66$

A ma woo suuba :  $(7 + 4) \times 6 = (7 \times 6) + (4 \times 6)$ .

A ma woo himakasine booboyan tee.

**Goy iyyantoo :** A ma nee taalibey ma hinna hinka taabaroo bere k'a ti dimma foo kan taaba sanda :

$$13 \times 4 = (10 + 3) \times 4$$

$$125 \times 2 = (100 + 20 + 5) \times 2$$

Dimma kan taaba nda hinna foo bere k'a ti taabariyan hinna sanda :  $5 \times (4 + 3) = (5 \times 4) + (5 \times 3)$ .

Alfagaa ma nee taalibey ma kabey wey guna.

$$(3 + 2) \times 7 = 5 \times 7 = 35$$

$$(3 \times 7) + (2 \times 7) = 21 + 14 = 35$$

**Denden**

1. Dimma foo kul bere m'a tee taabari nd'a ga hin ka tee.

$$7 + 7$$

$$4 + 4 + 4 + 4 + 4$$

$$8 + 8$$

$$3 + 3 + 3 + 3$$

$$10 + 2 + 5$$

$$55 + 55 + 55 + 55 + 55 + 55$$



2. Timmandi.

$$(18 + 15) \times 2 = (18 \times 2) + (\dots \times 2)$$

$$(23 + 73) \times 3 =$$

$$(215 + 54) \times 2 =$$

3. Wey bere m'i tee taabari hinka dimma, m'i kabu.

$$(7 + 4) \times 3 = ; (6 + 5) \times 2 = ; (28 + 34) \times 4$$

$$(110 + 82) \times 3 =$$

### Bonhaw

1. Saadu goo nda kiryoŋ pake 8. Pake foo kul kiryoŋ 20 goo a ra. Kiryoŋ marje bara Saadu se ?
2. Maryam na sukar kg 20 day. Kg foo kul ti kaatibi 90. Marje ti sukaroo nooroo hinnaa ?
3. Maamalakaw foo na saafun kartoŋ 4 neere Bulgunje ; kartoŋ foo kul, sorra hinka goo a ra. Sorra foo kul ti saafun 5. Duu saafunoo hinnaa nda taka hinka.



## Hinna fesu-fesuyan taabuyan ra

**Taasiha** : Taaliboo ma hin :

- ka hinna fesu-fesu taabuyan ra ;
- ka taabudaaroo cin.

### Kabu cahante

Wa kabey wey tee :

$$6 \times 3 ; 12 \times 4 ; 89 \times 2 ; 17 \times 5 ; 999 \times 2$$

$$55 \times 3 ; 35 \times 4 ;$$

- Hinna wey taabu nda 2  
14 ; 147 ; 219 ; 424.
- Hinna wey taabu nda 3.  
33 ; 29 ; 47 ; 107.
- Hinna wey taabu nda 4 :  
204 ; 709 ; 124 ; 514.

**Goyjinawey** : haya kul kaŋ ga hin ka goyoo tee.

### Goyey

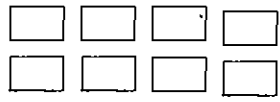
**Goy jinaa** : Alfagaa ga tondi-ize booboyaŋ jisi taabal foo kul boŋ. Taabal foo kul waney, a ma nee taalibey ma tondi 8 zaa i ra. I m'i tee kanandiyaŋ taka ra kaŋ nda hinnaa ga hin ka hantum nda hinna hinka taabuyan. Taalibey ma zaaboo hantum. Taalibey ma yee goyoo ga nda jinay 15 wala 30 nda hkh.

**Himakasinay** : Nda jinay 8 no ma goyoo tee :



$$\text{Wala } 8 = 2 \times 4$$

wala



$$8 = 4 \times 2$$



$$8 = 2 \times 2 \times 2$$

Kuray foo kul ma nga zaaboo hantum walhabeeroo ga.  
 Zaabey ma hantumandi walhabeeroo nongu foo ga.  
 Zaabey ma timmandi nd'a ga hima.  
 Taalibey ma yee goyoo ga k'a tee nda hinna tanayaŋ.

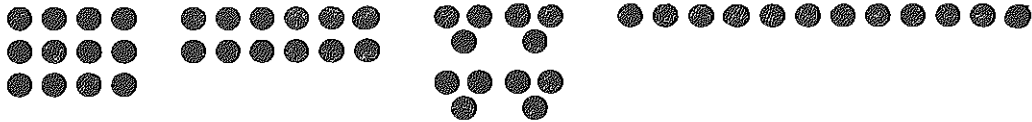
**Laasaabu :** Alfagaa ma taalibey fahamandi kaŋ hinna fooyaŋ fesu-fesuyanoo taabuyan ra si hin ka tee kala nda hinna hinka. sanda :

$$7 = 7 \times 1 \quad \text{wala } 7 = 1 \times 7$$

Alfagaa ma taalibey laasaabandi kaŋ :

- hinna kul ga hin ka hantumandi nda taka boobo ;
- hinna hinka ga taaba ka duu hinna follokaa.

**Goy hinkantoo :** Haawa, Naana, Isa nda Titti, affoo kul goo nda tondi-ize 12. Guna taka kaŋ nda boro foo kul na nga waney kanandi.



Ma zanka foo tondey hinnaa hantum nda hinna hinka taabayan.  
 Zaabey ma hantumandi walhabeeroo ga.

**Goy hinzantoo :** Alfagaa ma nee taalibey ma goyey wey tee :

1. kanjehinza 14 tee. I tee nda ihinka-hinka ma taabuyan himantaa tee.

2. Timmandi :

$$8 = \dots \times \dots ; 8 = \dots \times \dots ; 8 = \dots \times 1$$

$$12 = \dots \times \dots ; 12 = \dots \times \dots ; 12 = \dots \times 1$$

$$18 = \dots \times \dots ; 18 = \dots \times \dots ; 18 = \dots \times 1$$

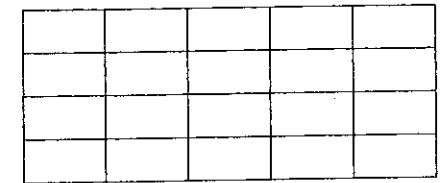
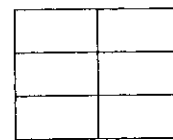
3. Duu hantumey kaŋ ga ti hinna foo :

$$14 ; 4 \times 3 ; 20 ; 4 \times 5 ; 7 \times 2 ; 2 \times 6 ; 12 ; 2 \times 7 ; 5 \times 4$$

4. Hinna foo kul ti taabuyan :

$$2 ; 8 ; 15 ; 16 ; 18 :$$

5. Biyey guna ma sasawandi foo kul timmandi :



$$6 = \dots \times \dots$$

$$9 = \dots \times \dots$$

$$20 = \dots \times \dots$$

6. Wey tee

$$3 \times 5 ; 6 \times 0 ; 5 \times 6$$

$$4 \times 4 ; 9 \times 7 ; 3 \times 8$$

7. Timmandi

X	0	1	2
3	...	...	...
	...	...	...
.	...	5	...

X	2	...	7
3	...	...	...
6	...	30	...
7	...	...	...

**Goy taacantoo :**

Alfagaa ma nee taabal foo kul taalibey ma tondi 20 zaa.

A ma nee taalibey ma tondey kanandi nda ihinka-hinka. I ma tondey hinnaa har, i ma taabaroo hantum nda hinna 2.

Sanda :  $10 \times 2$  wala  $2 \times 10$

I ma tondi kanandi foo kaa.

I ma duu kanandey kan cindi, hinnaa.

I ma hinnaa hantum nda hinna taabari.

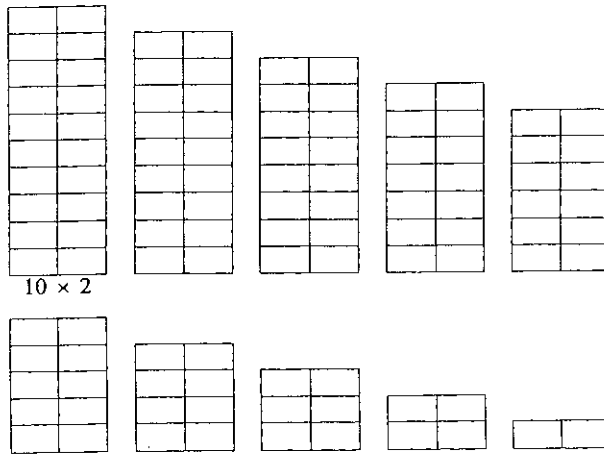
$$9 \times 2 = 18 ; \text{ wala } 2 \times 9 = 18$$

Alfagaa ga takaa woo da tee hala kanandi foo ma cindi. I ma nga taabayanoo hantum.

$$1 \times 2 = 2 \text{ wala } 2 \times 1 = 2.$$

**Laasaabu :** Goyey kanj tee zaabey ma hantumandi walhabeeroo caraw foo ga.

**Goy guwantoo :** Alfagaa ga zuu gaaru-gaarante wey tee walhabeeroo ga.



Alfagaa ma nee taalibey ma hugey hinnaa kanj goo zuu gaaru-gaarante foo kul ra hantum nda hinna hinka taabari.

Alfagaa ma nee taalibey ma hugey hinnaa kanj goo zuu gaaru-gaarante foo kul ra kabu, i ma woo kanj nda a ga sawa hantum.

$$2 \times 10 = 20$$

$$2 \times 9 = 18 \text{ nda hkh.}$$

### Denden

1. Tuuri-ize 24 tee.

- I kanandi nda ihinka-hinka, ma taabayanoo kanj ga hima hantum.
- I kanandi nda iddu-iddu, ma taabayanoo kanj ga hima hantum.
- I kanandi nda yaaha-yaaha, ma taabayanoo kanj ga hima hantum.

2. Kabey timmandi :

$$36 = \dots \times \dots ; 98 = \dots \times \dots ; 99 = \dots \times \dots$$

$$116 = \dots \times \dots ; 118 = \dots \times \dots ; 232 = \dots \times \dots$$

$$420 = \dots \times \dots ; 522 = \dots \times \dots ; 648 = \dots \times \dots$$

3. Duu hantumey kanj ga ti hinna folloku :

$$16 \times 2 ; 19 \times 3 ; 32 ; 48 ; 9 \times 9 ; 81 ; 8 \times 7 ; 56 ; 7 \times 7 ; 49.$$

4. Kabey tee

$$16 \times 8 ; 37 \times 9 ; 58 \times 9 ;$$

$$28 \times 7 ; 49 \times 8 ; 79 \times 9 .$$

### Bonhaw

1. Isata na gorgo tondi bata 122 day. Gorgo tondi 30 goo bata foo kul ra. Gorgo tondi marje no a day ?
2. Moobil foo ga dirakaw 80 zaa. Boro marje no moobil 7 ga zaa ?
3. Cawhugu foo ga taalibi 79 zaa. Alfagaa goo nda boosu bii 24 nda adabba bii 35.  
A ga hin ka bii foo noo nga taalibey affoo kul se wala ? Macin se ?
4. Boro 213 ga goy goydoo foo ra. 86 furandi.  
Goykaw marje ka cindi goydogoo ra ?
5. Bik kartonj foo ra, pake 722 goo. Ay na pake 383 neere subbaahoo ra.  
Pake hinnaa kanj cindi ceeci.
6. Alman koy foo goo nda kur kanj ga too haw bonj 857. A na haw bonj 377 neere.  
Haw bonj marje ka cindi kuroo ra ?

**Taabuyan nda 10 wala 100 ;  
nda 20 ; 30 ; 40 ; 50 ;**

**teeyanoo bila lanbari wala nda lanbari.**

**Taasiha :** Taaliboo ma hin :

- ka taabuyan tee nda 10 wala 100 ;
- ka taabuyan tee nda 20 ; 30 ; 40 ; 50...

**Kabu cahante :** Taaba nda ihinka, ihinza nda itaaci.

Kabu :  $2 \times 3 \times 4$  ;  $6 \times 2 \times 4$  ;  $2 \times 4 \times 3$ .

Hinnawey hantum m'i timmandi.

2 ; 4 ; 8 ; 16 ..... 128      15 ; 45 ; 135 ..... 1 215  
243 ; 81 ; 27 ..... 1      80 ; 40 ..... 5

**Goyjinawey :** Hinna goyjinawey\*.

**Goyey**

**Goy jinaa :**

Alfagaa ma nee taalibey ma dendeney wey tee :

a) Daaroo woo tee m'a timmandi

iwoy hinnaa	iwoy hinnaa dimmaa	iwoy hinnaa taabarey
2	$10 + 10 = 20$	$2 \times 10 = 20$
3	$10 + 10 + 10$	$3 \times 10 = 30$
4	.....	.....
5	.....	.....
6	.....	.....
7	.....	.....

b) Kiryoŋ 10 goo pake foo ra. Marje bara pake 5 ra ? Pake 8 ra ?  
Alfagaa ma taalibey laasaabandi kaŋ nda boro ga hinna taabu nda 10, ni mma hinnaa hantum jina ma yaada foo hantum kanbe guma here.

**Laasaabu :** Nda boro ga hinna taabu nda 10, ni mma hinnaa hantum jina ma yaada foo hantum kanbe guma here.

**Denden**

Kabu :  $7 \times 10$  ;  $9 \times 10$  ;  $14 \times 10$  ;  $13 \times 10$  ;  $834 \times 10$  ;  $999 \times 10$ .

**Goy hinkantoo :**

Alfagaa ma yee goy jinaa ga nda 100 hinnaa.

Nda boro ga hinna taabu nda 100, ni mma hinnaa hantum jina ma yaada hinka hantum kanbe guma here.

**Denden**

Kabu :  $55 \times 100$  ;  $78 \times 100$  ;  $95 \times 100$ .

**Goy hinzantoo :** Taka foo nda hinna ga taabandi nda 20 ; 30 ; 40 ; 50 ;....

Alfagaa ma nee taalibey ma dendenoo woo tee.

Daaroo woo tee m'a timmandi nda  $4 \times 20 = (4 \times 2) \times 10 = 8 \times 10 = 80$

x	4	7	8	9
20	$(4 \times 2) \times 10 = 80$	$(7 \times 2) \times 10 = 140$	.....	.....
30	$(4 \times 3) \times 10 = 120$	.....	.....	.....
40	.....	.....	.....	.....
50	.....	.....	.....	.....
60	.....	.....	.....	.....
70	.....	.....	.....	.....
80	.....	.....	.....	.....
90	.....	.....	.....	.....

Alfagaa ma nee taalibey ma duu takaa kaŋ nda boro ga hinna taabu nda 20 ; 30 ; 40 ; 50 ;...

**Laasaabu :**

Nda boro ga hinna taabu nda 20 wala 30 ; 40 ; 50 ; ..., boro mma a taabu nda 2 wala 3 wala 4 wala 5..., ma yaada hantum taabaroo kanbe gumaa here.

\* hinna goyjinawey : matériel de numération

**Denden**

Wey tee :  $5 \times 40$  ;  $6 \times 30$  ;  $3 \times 50$  ;

**Goy taacantoo :**

Alfagaa ma taalibey tee kuray-kuray. A ma nee i ma dendenoo woo tee :  $123 \times 3$ .

123 hinnaa biyoo ti kaare foo kaŋ ti zangubonoo, muulubii 2 kaŋ ti iwoybonney, nda zeeri hinza kaŋ ti affowey.

Kuray foo kul ga yaamaroo woo tee ka duu dendenoo zaaboo :

Kuray foo kul ma hinna goyjinaa zaa cee 3.

Kuray foo kul ma hinna goyjinaa woo marga cere ra, a ma hinnaa kaŋ nd'a ga sawa hantum hinna daaroo ra.

Kuray foo kul ma nga goyoo biyoo tee.

**Goy guwantoo :**

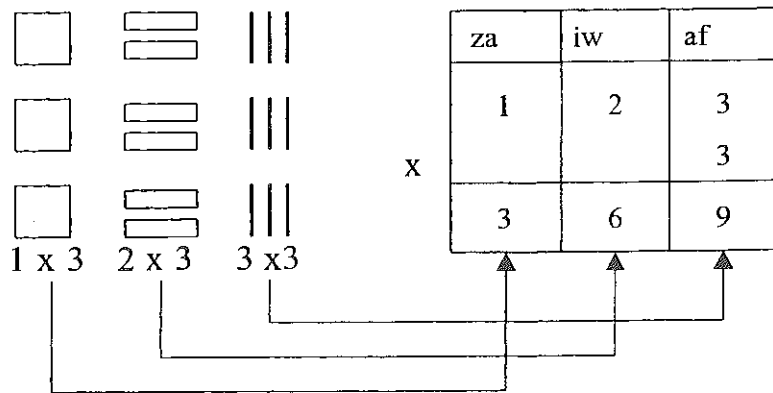
Alfagaa ma nee taalibey ma hinna goyjinaa tee walhabeeroo ga.



$1 \times 3$  ;  $2 \times 3$  ;  $3 \times 3$

$1 \times 3 = 3$  ;  $2 \times 3 = 6$  ;  $3 \times 3 = 9$

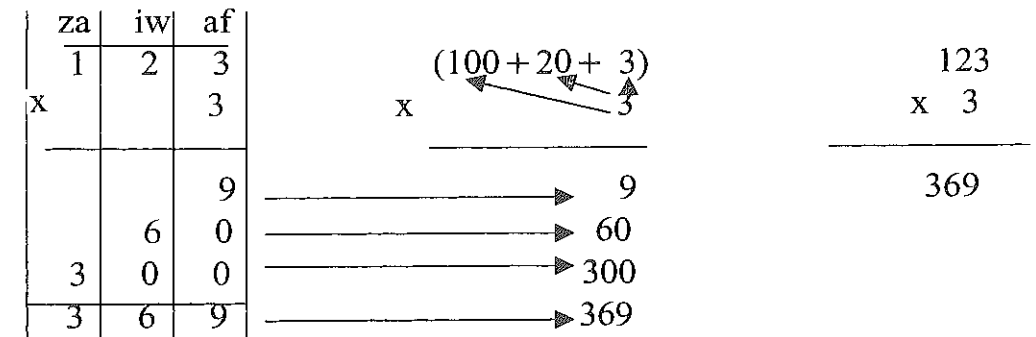
Alfagaa ma nee taalibey ma zaaboo hantum hinna daaroo ra :



**Goy idduwantoo :**

Alfagaa ma nee taalibey ma dendenoo woo tee nda fesuu-fesuyanoo woo :  $123 = 100 + 20 + 3$ .

Alfagaa ma zaaboo hantum nda takaa woo :



369 ti  $123 \times 3$  zaaboo taabuyan ra kaŋ sii nda lanbari

**Goy iyyantoo :**

Alfagaa ma nee taalibey ma kabey wey tee :

$112 \times 4$  ;  $204 \times 2$  ;  $311 \times 5$ .

Wey tee m'i timmandi.

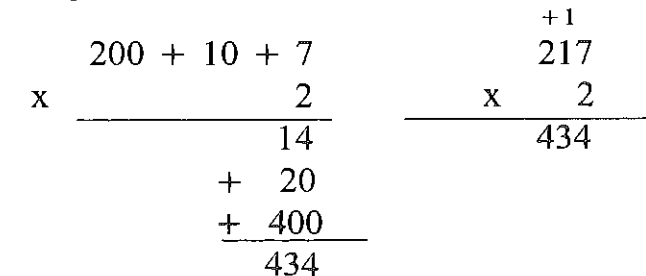


**Goy yaahantoo :**

Alfagaa ma nee taalibey ma dendenoo woo tee

217 fesuu-fesuu cee foo ka  $217 \times 2$  kabu.

Alfagaa ma zaaboo hantum nda takaa woo :



Alfagaa ma kate taalibey ma nee kaŋ  $14 = 10 + 4$   
10 ga hin ka barmay nda iwoybonj 1 kaŋ se i ga nee lanbaroo.

Alfagaa ma nee kaŋ 434 ti 217 x 2 zaaboo taabuyan ra kaŋ goo nda lanbari.

### Denden

- Kabey tee.  $36 \times 10$  ;  $8 \times 100$  ;  $250 \times 10$  ;  
 $127 \times 10$  ;  $23 \times 100$  ;  $345 \times 10$  ;  
 $398 \times 10$  ;  $672 \times 100$  ;  $75 \times 100$ .
- Wey hantum m'i tee. 
$$\begin{array}{r} 21 \\ \times 5 \\ \hline \end{array}$$
 ; 
$$\begin{array}{r} 43 \\ \times 3 \\ \hline \end{array}$$
 ; 
$$\begin{array}{r} 124 \\ \times 2 \\ \hline \end{array}$$
 ; 
$$\begin{array}{r} 401 \\ \times 6 \\ \hline \end{array}$$
- Kabey wey suka m'i tee.  $52 \times 4$  ;  $41 \times 5$  ;  $214 \times 2$  ;  $301 \times 6$  ;  
 $8 \times 20$  ;  $9 \times 50$  ;  $7 \times 70$  ;  $1\ 211 \times 7$  ;  $4\ 214 \times 2$
- Wey hantum m'i timmandi.  

$$\begin{array}{r} 5. \\ \times 3 \\ \hline 1.6 \end{array}$$
 ; 
$$\begin{array}{r} 1.3 \\ \times 2 \\ \hline 206 \end{array}$$
 ; 
$$\begin{array}{r} 31 \\ \times . \\ \hline 124 \end{array}$$
 ; 
$$\begin{array}{r} \dots \\ \times 4 \\ \hline 448 \end{array}$$
- Wey hantum m'i tee.  

$$\begin{array}{r} 15 \\ \times 4 \\ \hline \end{array}$$
 ; 
$$\begin{array}{r} 18 \\ \times 5 \\ \hline \end{array}$$
 ; 
$$\begin{array}{r} 207 \\ \times 6 \\ \hline \end{array}$$
 ; 
$$\begin{array}{r} 144 \\ \times 8 \\ \hline \end{array}$$
 ; 
$$\begin{array}{r} 3\ 149 \\ \times 3 \\ \hline \end{array}$$
- Wey suka m'i tee.  
 $57 \times 4$  ;  $75 \times 6$  ;  $39 \times 20$  ;  $143 \times 40$  ;  $84 \times 60$  ;  $121 \times 5$   
 $436 \times 2$  ;  $129 \times 8$  ;  $1\ 307 \times 6$  ;  $1\ 447 \times 4$  ;  $117 \times 50$  ;  $145 \times 30$
- Wey hantum m'i timmandi.  

$$\begin{array}{r} 10. \\ \times 5 \\ \hline 510 \end{array}$$
 ; 
$$\begin{array}{r} 4.6 \\ \times 2 \\ \hline 87. \end{array}$$
 ; 
$$\begin{array}{r} 57 \\ \times . \\ \hline 171 \end{array}$$
 ; 
$$\begin{array}{r} .7 \\ \times 5 \\ \hline 18. \end{array}$$

### Bonhaw

- Lam pake foo ti kaatibi 20. Marje ti pake 10 ? Pake 100 ?
- Ham kg foo ti kaatibi 150. Marje ti kg 10 ? Kg 100 ? Kg 30 ?  
 Kg 50 ? Kg 60 ?
- Biski kg pake foo ti kaatibi 60. Pake 100 ti marje ?
- Basan meetar foo hayoo ti kaatibi 900. Hinna foo ti meetar 10 nooroo ?
- Yuwar goo nda lokkol 4. Lokkol foo kul goo nda taalibi 221. Lokkol-ize marje bara Yuwar lokkoley ra ?
- Goorona maamalakaw foo goo nda kokondo 7 kaŋ affoo tamaati 180 goo a ra. Marje ti nga tamaatey hinnaa ?
- Bonboŋ 55 goo pake foo ra. Bonboŋ marje bara pake 5 ra ?
- Gorodoo 46 bara Tabangaw loore foo ra. Dirakaw marje no a ga hin k'i zaa diray 6 ra ?
- Kangaw 307 goo Nguuma woyoo saaku foo ra. Kangaw marje bara saaku 9 ra ?

**Zamna tetteyanoo\* ; hinna foo taabarey nda nga zamnakey. Zamnari ceeciyar sakuyan ra**

**Taasiha :** Taaliboo ma hin :

- ka zamnayan bay, ka bojhawyan feeri a ra nda tontonyan, kaayan nda taabuyan ;
- ka bojhawoo tenjandi nda sawandoo woo :  
 $H = (zk \times zi) + c < zk^*$  ;
- ka zemnari nda cindi bay ;
- ka hinna taabariyan bay ;
- ka hinna taabariyan bay ;
- ka bay kan hinnaa woo ti taabarey wey affoo foo kul zamnakaw ;
- ka hinna saku nda hinna foo taabari hinka kan ga hanga cere ;
- ka sakuyan tee ka zamnari nda cindi bay zemnayan ra.

**Kabu cahante :**

Kabey wey tee.  $44 \times 2$  ;  $36 \times 3$  ;  $105 \times 4$

**Goyjinawey :** Jinay kan ga duwandi gandaa ra (tondi-ize, teenay guli, kangaw guli, garbay guli...)

**Goyey**

**Goy jinaa :** Alfagaa ma taalibey tee kurayyan. A ma nee kuray foo kul se a ma tondi-ize 80 margari tee. Alfagaa ma nee kuray foo kul se a ma dendenoo woo tee nda tontonyan wala kaayan wala taabuyan.

\* tetteyanoo : sintinoo, dendenyanoo (approche, initiation)  
 \* H : hinna ; zk : zamnakaw ; zi : zamnari ; c := cindi.

**Denden :** Tondi-ize 80 zamnandi taalibi 18 game.

Tondi-ize marje no taalibi foo kul duu ?

Tondi-ize ga cindi kan mana zamnandi wala ?

**Goy hinkantoo :** Alfagaa ma kabu dumi foo kul tee ka taalibey

kata i ma sawandoo hantum :  $80 = (18 \times 4) + 8$

A m'i cebe woo kan ti zemnaroo nda woo kan ti cindoo :

4 ti zamnaroo, 8 ti cindoo

A m'i cebe kan  $8 < 18$

Alfagaa ma nee i se kan waati kul cindoo ga kacca nda zemnaka.

18 ti hinnaa kan nda i na 80 zemni : 18 ti zemnaka.

**Goy hinzantoo :**

Alfagaa ma nee Faadi ma margariyan tee kan affoo kul teenay guli 5 g'a ra.

Teenay guli marje nd'a ga margari 1 tee ?

margari 2 tee ?

margari 3 tee ?

margari 4 tee ?



Alfagaa ma nee Faadi ma kabey wey timmandi.

$5 \times 1 = \dots$

$5 \times 2 = \dots$

$5 \times 5 = \dots$

$5 \times 3 = \dots$

$5 \times 4 = \dots$

$5 \times 6 = \dots$

Faadi na 5 taabu cee 1, 2, 3, 4, 5, nda 6.

Hinnawey kan a duu ey kul 5 taabariyan no. Taalibey ma 5 taabari tanayan ceeci.

Alfagaa ma haa : 50 ti 5 taabari wala ? 42 ti 5 taabari wala ?

Woo banda ga alfagaa ma bayrandi taalibey se kan hinna taabarey sii nda kaydoo.

Alfagaa ma nee taalibey ma 2, 3, 4, 7 taabariyan ceeci.

Alfagaa m'i bayrandi haya kaŋ ti zamnakaw.

Sanda 2 ti nga taabarey kul zamnaka.

Alfagaa ma hinna taabarey kaŋ ga hanga cere bayrandi taalibey se : 14 nda 16 ti 2 taabari hinka kaŋ ga hanga cere.

**Goy taacantoo :** Alfagaa ma hinna hinka a nda b noo taalibey se. b ti hinnaa kaŋ ti kabu-ize foo kaŋ man'ti 0.

Alfagaa ma nee kuray foo kul se a ma b saku nda taabari hinka kaŋ ga hanga.

**Goy guwantoo :** Alfagaa nda taalibey ma yee goy jinaa dendenoo ga. A ma taalibey cebe kaŋ  $18 \times 4 < 80 < 18 \times 5$

$$80 = (18 \times 4) + 8$$

Alfagaa ma nee : 4 kaŋ ti zemnaroo nda cindoo kaŋ ti 8, mana duwandi kala 80 kaŋ zemna 18 . Woo kul mana duwandi kala nda 80 kaŋ taabari hinka kaŋ ga hanga cere, na saku.

**Goy idduwantoo :** Alfagaa ma nee taalibey ma dendenyaŋ tee kaŋ ga hima goy jinaa wanoo. A ma nee taalibey ma sakuyan tee dendeney wey ra.

### Denden

1. Buuba na daaray mindi foolo day kaŋ ra mindi 24 goo. A ga baa nga m'i zamni nga ize iyyaa game, i ma sawa. Marje ti hinna beeroo kaŋ zanka foo kul ga duu a mindi timmante ra ?

- Haya ga cindi daaray mindey ra wala ?
- Daari tee ka duu zaaboo

2. Guli zamnayan banda ga, sawandey kaŋ duwandi ne :

$$25 = (3 \times 7) + 4 \quad 68 = (8 \times 8) + 4$$

$$22 = (4 \times 5) + 2 \quad 80 = (9 \times 8) + 8$$

Sawandi foo kul ra :

Marje ti hooraykey hinnaa ?

Hinna foo ti zamnaroo ? Macin doo ra a goo ?

Guli marje ka cindi ?

3. Laasaabu ma 3 taabarey kaŋ ga hanga cere timmandi.

0 ; 3 ; 6 ; 12 ; ... 30.

4. Hinnawey wey : 14 ; 17 ; 21 ; 28 ; 32 ; 35 ; 40, affooyaŋ ti 7 taabarey ?

5. Hinnayaŋ ne : 1 ; 4 ; 6 ; 8 ; 11 ; 12 ; 15 ; 17 ; 24 ; 28.

- 3 taabarey nda 4 taabarey hantum
- macin ti taabarey kaŋ ga 3 nda 4 kul taabu ?

6. 7 Taabudaaroo ne :  $7 \times 1 = 7$  ;  $7 \times 2 = 14$  ;  $7 \times 3 = 21$  ;

$$7 \times 4 = 28 ; 7 \times 5 = 35 ; 7 \times 6 = 42 ; 7 \times 8 = 56 ;$$

$$7 \times 9 = 63 ; 7 \times 10 = 70.$$

Daaroo woo guna, ma hinnawey wey saku nda 7 taabari hinka kaŋ ga hanga cere : 25 ; 39 ; 53 ; 67.

7. 12 ti 4 taabari wala ? 16 ti 4 taabari wala ? Ngi dimmaa ti 4 taabari wala ?

8. Zamnayaney wey tee nda sakuyan: 41 zemna 7 ; 263 zemna 4 ; 12 zemna 6 ; 253 zemna 9.

Sakuyan tee ka boŋhawey wey feeri :

9. Lokkol tunyanoo ga, dikteroo na zanka 100 hantum cawhugu 3 se. A ga baa nga ma duu hinna follokaa cawhugu foo kul ra. Woo ga hin ka tee wala ?

Zanka marje no ma hima ka huru cawhugu foo kul ra ?

10. Saaban ga baa nga ma gorgoguuri 245 dam bata 8 ra.

Guuri marje no ma hin ka huru bata foo kul ra ?

Guuri marje ma cindi ?

11. Aliyyu na kangaw 46 kaa tuuroo ga ; a n'i zamni fakkas\* nga ize 6 game.

Kangaw marje no ize foo kul duu ?

Kangaw ga cindi kaŋ mana zamnandi wala ?

Nda haya cindi, nga hinnaa hantum.

\* fakkas (ka zamna) : haŋa nda hilli



**10** Zamnayan kaɗ ra zamnakaɗ ga ti kabu-ize foo , cindoo ga ti yaada (zamnaroo ga sawa) wala a si ti a

**Taasiha :** Taaliboo ma hin :

- ka taabuyan suka, a ma hin k'a tee ;
- ka zamnantaɗ nda zamnakaɗ bay zamnayan ra ;
- ka zamnari saku nda zamnakaɗ taabari 10 wala taabari 100 wala taabari 1000.... ka duu nga kabu-izey hinnaɗ ;
- ka zamnayan kaɗ zamnakaɗ ti kabu-ize foo gorondi, k'a tee.

**Kabu cahante :** :

- Zamnayaney wey ra, zamnantaɗ saku nda zamnakaɗ taabari 10 wala taabari 100 kaɗ ga hima : 367 : 5 ; 89 : 7
- Marje ti zamnari foo kul kabu-izey hinnaɗ ?

Daarey wey berandi m'i timmandi.

x	50	25	242	1 000
5	250	....	....	....

Kabey wey tee :

61 x 5 ; 36 x 5 ; 104 x 5 ; 1 011 x 5 ;

x	45	300	12	145
10	.....	3 000	.....	.....

Kabey tee ; 47 x 10 ; 590 x 10 ; 847 x 10 ; 999 x 10 ;

**Goyjinawey :** Jinay kaɗ ga duwandi koyraa ra.

**Goyey**

**Goy jinaa :**

Alfagaa ma nee taalibey ma zamnayanoo woo tee :

$$4375 : 9 = \dots$$

Taalibey m'a gorondi k'a tee :

$$\begin{array}{r} \text{zaaboo} \longrightarrow 437 \quad | \quad 9 \\ \phantom{\longrightarrow} 77 \quad | \quad 48 \\ \phantom{\longrightarrow} 5 \quad | \end{array}$$

Alfagaa ma nee taalibey ma zamnayanoo hantum sanda :

$$H = (zk \times zi) + c \quad H = (zk \times zi) + c$$

Woo din ti : 437 = (9 x 48) + 5

**Goy hinkantoo :**

Alfagaa ma nee taalibi foo ma zamnayanoo gorondi walhabeeroo ga.

$$\begin{array}{r} \text{A ga hantum :} \quad 437 \quad | \quad 9 \\ \phantom{\text{A ga hantum :}} 77 \quad | \quad 48 \\ \phantom{\text{A ga hantum :}} 5 \quad | \end{array}$$

Alfagaa ma taalibey fahamandi kaɗ :

- 437 ti zamnantaɗ
- 9 ti zamnakaɗ
- 48 ti zamnaroo
- 5 ti cindoo.

**Goy hinzantoo :**

Alfagaa ma nee taalibey ma zamnayanoo woo tee. 275 : 4. I ma 4 taabarey ceeci hala i ma duu hinna hinkaa kaɗ ga hanga cere, i ga 275 saku. Woo din ti : ... x 4 < 275 < ... x 4.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma zamnaroo saku nda zamnaka taabari 10 wala nga taabari 100 wala taabari 1000 ka duu zamnaroo kabu-izey hinnaa.

$$3\ 742 : 8$$

Dirandoo :

Zamnayanoo woo ra, 8 ti zamnaka

Taalibey ga laasaabu kaɗ :

$$80 \text{ ti } 8 \text{ taabari } 10 \quad (8 \times 10)$$

$$800 \text{ ti } 8 \text{ taabari } 100 \quad (8 \times 100)$$

$$8000 \text{ ti } 8 \text{ taabari } 1000 \quad (8 \times 1000)$$

saa din

$$800 < 3742 < 8000$$

wala

$$8 \times 100 < 3742 < 8 \times 1000$$

Taalibey ma faham kaɗ zamnaroo goo 100 nda 1000 game ; kabu-ize hinza no.

Alfagaa ma goyoo himakasineyaɗ noo taalibey se, i m'i tee.

**Goy guwantoo :**

Alfagaa ma nee taalibey ma zamnayanoo woo suka i m'a tee 3742 : 8. Kabu-ize marje bara zamnaka se ?.

A g'i fahamandi kaɗ soho kaɗ zamnaroo ti kabu-ize 3 boro mma jin ka zangubonɗey kaɗ goo a ra kabu-izoo ceeci. Zangubonɗ 37 bara zamnanta ra.

37 zamnari 8 ga sawa nda 4 zangubonɗ 4 taabari 8 ga sawa nda 3200 nda 3200 hun 3742 ra, a ga cindi 542

Iwoybonɗ 54 bara cindoo ra.

54 zamnari 8 ga sawa nda 6 iwoybonɗ 6 taabari 8 ga sawa nda 480 nda 480 hun 542 ra, a ga cindi 62

affoo-foo 62 ti cindoo

7 taabari 8 ga sawa nda 56.

$$\begin{array}{r|l}
 3\ 742 & 8 \\
 - 3\ 200 & \hline
 .542 & 467 \\
 - 480 & \\
 .62 & \\
 - 56 & \\
 \hline
 6 & 
 \end{array}$$

Nda 56 hun 62 ra a ga cindi 6. Cee marje no kaayan tee ?(cee hinza)

zamnaroo ti 467, cindoo ti 6

$$\text{kaboo ti : } 3742 = (467 \times 8) + 6$$

Alfagaa ma goyoo woo himakasineyaɗ noo taalibey se i m'i tee.

**Denden**

Wa zamnayaney wey suka k'i tee

$$1. \ 273 : 8 ; 1584 : 6 ; 142 : 4 ; 3761 : 8$$

$$79 : 3 ; 4032 : 5 ; 56 : 5.$$

2. Daaroo woo berandi m'a timmandi

zamnayan	sakuyan	zamnaroo goo ... nda ... game	zamnaroo kabu-izey hinnaa
78 : 8	$8 \times 0 < 7 < 8 \times 10$	0 da 10	1
148 : 6	$6x... < 148 < 6x...$	10 nda 100	....
630 : 9	.....	....	....
4756 : 5	....	....	....

3. Duu zamnaroo kabu-izey hinnaa. Kaboo gorondi m'a tee.

$$35 : 4 \quad 932 : 5 \quad 1284 : 7$$

$$57 : 8 \quad 2049 : 9 \quad 1468 : 3$$

$$75 : 5 \quad 715 : 8 \quad 7090 : 9$$

$$75$$

**Bonhaw :** Bonhawey wey ra, jin ka duu zamnaroo kabu-izey hinnaa, ma duu ka i tee.

1. Dilwil jii l 80 goo bargu foo ra. Liitar 5 bidonɗ marje no boro ga hin k'i too a ra ?

2. Korooti 1087 duwandi Banba lokkol sardiɗaa ra. Taalibey g'i haw iddu-iddu. Hawari marje no i ga hin k'a tee ?

3. Han foo Burayma nda nga ceroo koy hoo, Hooro bangoo ra. Subbaahoo ra, i duu hamiisa kg 340, wicroo ra, i duu kg 98. Nda i n'i zamna bonɗay-bonɗay, hamiisa kg marje no boro foo kul ga duu ?

**Taasiha :** Taaliboo ma hin ka kabu kabilaa bay kaŋ nda a ga kabu mise goy : tontonyan wala kaayan, wala taabuyan, wala zamnayan.

**Kabu cahante :**

$45 \times 100 = \dots$  ;  $90 \times 100 = \dots$  ;  $258 \times 10 = \dots$  ;  $8 \times 1000 = \dots$

Taka foo nda boro ga hima ka taabu nda 10, nda 100, nda 1 000, nda 10 000 ?

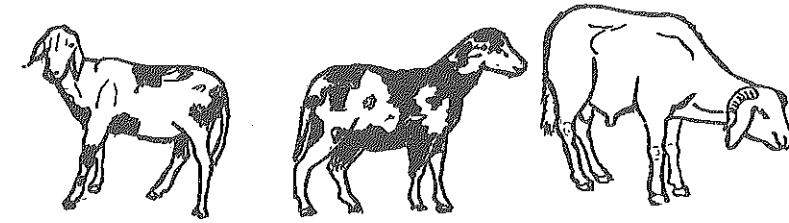
**Zaabi :** Boro mma 0, wala 00, wala 000, wala 0000 hantum hinnaa jere gumaa ga.

1. Hawwa na bonboŋ pake hinka day kaŋ affoo kul ize 148 goo a ra. Marje bara pake hinkaa ra ?
2. Ahuudu nda Buuba na Koyranse yooboo dam. Boro foo kul koy nda haw 102. Haw marje nd'i na Koyranse yooboo dam ?
3. Cee 3 no Sulay na attay haŋ zaaroo ra. Cee foo kul canbu 3 no a ga haŋ. Marje no a haŋ zaaroo ra ?
4. Konkoššaa bandaa ga, alfagaa na taalibi 4 biney kaanandi nda kalamyaŋ. Taalibi foo kul duu kalam 12. Kalam marje no alfagaa na zamna taalibey se ?
5. Maryetu koy Jenne yooboo ra, a na haw 8 kawsey day. Kawsi marje no Maryetu day ?

**Goyjinawey :** Jinay kaŋ ga duwandi koyraa ra.

## Goyey

**Goy jinaa :** Alfagaa ma nee taalibey ma boŋhawoo woo tee.



k 2 700

k 3 450

k 3 900

Amadu na feeji hinza neere Leere yooboo ra. I jinaa day k 2700 ; ihinkantoo day k 3 450 ; ihinzantoo day k 3 900. Kaatibi marje no Amadu duu nga feejey ra ?

Taalibey ma boŋhawoo tee.

**Goy hinkantoo :** Alfagaa ma nee taalibey ma boŋhawey wey tee.

1. Taalibi 6 406 na jiiri idduwantoo zimam beeroo tee Daŋa laamaa ra. Boro 4 166 koy jine. Boro marje ti wey kaŋ mana duu ?
2. Moobiley ra, boro foo hiihayoo ka hun Tunbutu ka koy Mowti ga sawa nda k 2 500. Marje ti boro 3 hiihayoo ?  
Taalibey m'a tee.
3. Siidi na boro 9 goyandi nga faaroo ra bi zaari. A n'i bana k 3 600.  
Marje no goykaw foo kul duu ?

## Boŋhaw

1. Moobil foo ga hin ka kg 9 850 sanbu cee foo. Koyoo na moo kg 7 500 nda sukar kg 460 dam a ra. Kilogaram marje jinay ma hin ka huru a ra koyne ?
2. Koyra hinka kaŋ ga taalamma borey hinnaa ga sawa nda 2 748 nda 4 365. Boro marje ma bara koyra hinkaa ra ? Nda arey hinnaa ti 3 450 marje ti woyey hinnaa.
3. Ali na kabu tiira 3 day ng'izey se, tiira foo kul k 6 40 nda caw tiira 2, affoo kul k 570. Marje no Ali bana ?

4. Abdu na sukka baynsa\* 6 day k 7 800. Marje ti baynsa foo kul hayoo ? A bana nda 2 000 fita 4. Marje ma yee Abdu se ?

5. Karango maamalakaw foo goo nda hayni kilo 1 800 nga mangasaa ra. A na kilo 50 50 caaku 8 neere affoo kul kaatibi 37 kilo. Hayni kilo marje ka neerandi ? Nooru marje no maamalakaa duu ? Hayni kilo marje ka cindi ?

\* baynsa : piisi = pièce

**Taasiha :** Taaliboo ma hin :

- ka 10 000 hinnaa caw, k'a hantum kabu-ize nda harfu ra ;
- ka kabu-ize wala kabu-ize kuray alkadaroo bay nga dogoo bande hinna ra ;
- ka 10 000 hinnaa cin, k'a fesu-fesu ;
- ka hinna saku nda iwoyboŋ hinka, wala zanguboŋ hinka, wala zenberboŋ hinka kaŋ ga hanga cere ;
- ka hinnayaŋ deedandi, k'i hanga-hangandi cere ka hun 0 ka koy 10 000 hinnawey ga.

**Kabu cahante :**

Wa kabu nda waranka cindi guu-guu ka hun 100 ka koy 1000.

Marje ma cindi ?  $300-50 = ?$   $500 - 450 = ?$  ;  $250-50 = ?$

**Goyjinawey :**

**Goyey**

**Goy jinaa :**

Umar duu nooru fitawey wey :



k 1000	k 1000	k 1000	k 1000	k 1000
k 1000	k 1000	k 1000	k 1000	k 1000

Kaatibi 1000 fita marje no Umar duu ?  
 Marje ti nooroo kaŋ Umar duu a ?  
 Nooroo hinnaa hantum kabu-izey daaroo ra.

zenberay		kabu-ize dooney		
iw	af	za	iw	af

**Goy hinkantoo :** Daaroo guna ma kabu-ize foo kul, wala kabu-ize kuray foo kul alkadaroo har hinna ra : zenber foo boŋey nda zenber woy boŋey kabu-ize.

Taaliboo ma 10 000 hinnaa fesu-fesu nda tontonyan wala taabuyan

$$10\ 000 = 5\ 000 + 5\ 000$$

$$10\ 000 = 8\ 000 + 2\ 000$$

$$10\ 000 = 1\ 000 \times 10$$

$$10\ 000 = 1\ 00 \times 100$$

$$10\ 000 = 2\ 000 \times 5$$

### Goy taacantoo :

Alfagaa ma nee taalibey ma hinnawey saku nda iwoyboŋ hinka, wala zanguboŋ hinka kaŋ ga hanga cere.

815 ; 86 ; 5 472 ; 329 ; 28 ; 8 999.

### Goy guwantoo :

Alfagaa ma nee taalibey ma hinnawey wey deedandi k'i hanga-hangandi cere ka hun ibeeroo ga ka kaa ikaccaa ga nda ka hun ikaccaa ga ka yee ibeeroo ga : 376 nda 19 ; 2 854 nda 93 ; 9007 nda 10 000 ; 652 nda 652 ; 5305 nda 176.

### Denden

1. Hinnawey wey hantum nda kabu-ize.

Zenber yaaha nda zangu hinza nda waranka cindi guu

Zenber yagga nda zangu yagga

Zenber woy.

2. Hinnawey wey hantum nda harfu.

3 500 ; 2 854 ; 8 072 ; 9 995.

3. Hinnawey wey hantum kabu-ize daaroo ra.

zenberay		kabu-ize dooney		
iw	af.	za	iw	af.

7 000 ; 5 632, 10 11 ; 7777 ; 3003.

4. Duu hinnawey kul kaŋ ga kubay nda kabu-izey wey : 7, 9, 1, 5, taka kaŋ ra kabu-ize foo kul si fillandi, m'i deedandi, m'i hanga-hangandi cere ka hun ikaccaa ga ka koy ibeeroo ga.

5. Hinnawey wey saku nda iwoyboŋ hinka kaŋ ga hanga cere : 69 ; 36 ; 81.

6. Hinnawey wey saku nda zanguboŋ hinka kaŋ ga hanga cere : 306 ; 245 ; 801 ; 638.

7. Hinnawey wey saku nda zenberboŋ hinka kaŋ ga hanga cere : 1 349 ; 5078 ; 7407 ; 9 999.

8. Hinnawey wey hanga-hangandi cere ka hun ibeeroo ga ka koy ikaccaa ga : 5 700 ; 2 015 ; 9 849 ; 1 002 ; 6 999.

## 0 ka koy 10 000 hinnawey bisaceraa

**Taasiha :** Taaliboo ma hin :

- ka hinnayan deedandi nda tammaasawey wey : <, >, = ;
- ka hinnayan deedandi, k'i saku nda 10, wala 100, wala 1 000 taabariyan ;
- ka hinna toondi (kayandi), iwoyboŋ, wala zanguboŋ wala zenberboŋ ga kaŋ ga man a ka bisa cindey.

**Kabu cahante :**

- Zuweŋ handoo ra « EDM » n'ay banandi k 2 000 hari hay nda 3 500 sahaŋ hay. Marje n'ay bana EDM se ?

Kabey wey tee

$$10 + 24 + 7 ; 432 + 162 + 100 ; 151 + 71 + 14 ;$$

$$104 + 17 + 29 ; 518 + 141 + 216 ; 301 + 18 + 71.$$

**Goyey**

**Goy jinaa :**

Isa na kaatibiyang zamna nga izey game, i ma maamala.

Ibeeroo duu k 38, ihinkantoo duu k 43, ikaccaa duu k 25.

Alfagaa ma nee taalibey ma zankey bagey deedandi. I ma woo kaŋ si too 50, woo kaŋ ga bisa 40 a si too 50, har.

Taalibey ma laasaabu kaŋ  $40 < 43$  ;  $43 < 50$  ; i ga hin ka nee : 43 goo 40 nda 50 game.

Woo ti 40 nda 50 ga 43 saku sanda :  $40 < 43 < 50$

43 goo iwoyboŋ 4 nda iwoyboŋ 5 game ; a ga man 40 ka bisa 50.

Taalibey ma goy follokaa tee nda 38 ; 25.

**Goy hinkantoo :**

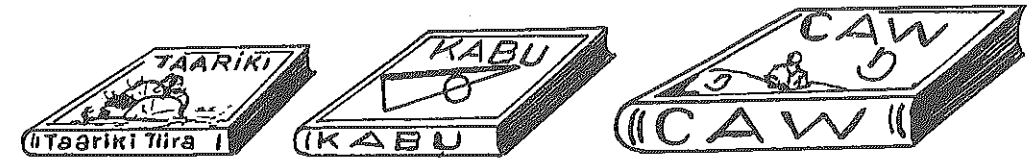
Taalibey ma duu iwoyboŋoo kaŋ ga man hinna ka bisa sanda :

$$60 < 67 < 70 \text{ (70 ga man a ka bisa),}$$

a ga hantum 70

Taalibey ma goyoo woo cine boobo tee .

**Goy hinzantoo :**



k 290

k 485

k 650

Alfagaa ma nee taalibey ma tiirawey hayey deedandi.

I ma woo har kaŋ hayoo bisa i kul, i ma woo har kaŋ hayoo kacca nd'i kul.

Taalibey ma wey har kaŋ hayey ga bisa 200, wey kaŋ hayey si too 600, woo kaŋ hayoo ga bisa 200, a si too 300.

Alfagaa ma kate taalibey ma nee kaŋ  $200 < 290$  ;  $290 < 300$ .

I ga hin ka nee 290 goo 200 nda 300 game. Woo ti 200 nda 300 ga 290 saku, sanda :  $200 < 290 < 300$ .

290 goo zanguboŋ 2 nda zanguboŋ 3 game ; a ga man 300 ka bisa 200.

Taalibey ma goy follokaa tee nda 485 nda 650.

**Goy taacantoo :**

Taalibey ma duu iwoyboŋoo wala zanguboŋoo, wala zenberboŋoo kaŋ bisa ka man hinna ga. Sanda  $800 < 890 < 900$ . 900 ti zanguboŋoo kaŋ bisa ka man 890.

Taalibey ma goyoo woo cine boobo tee.

**Goy guwantoo :**

Koyrataawoo yooboo ga, hayni caaku ga day 3500 ; ŋaari caaku 4800 ; alkama caaku 4500.

Alfagaa ma nee taalibey ma caakey hayey deedandi. I ma woo har kaŋ hayoo kacca nd'i kul.

Taalibey ma caakey har kaŋ hayey si too 6000, i ma woo har kaŋ hayoo ga bisa 3000 a si too 4000 ; caakoo din hayoo ma deedandi sanda :  $3500 < 4000 < 4500$ .

Taalibey ma laasaabu kanj  $3000 < 3500$ ,  $3500 < 4000$ . I ga hin ka nee 3500 goo 3000 nda 4000 game. Woo ti 3000 nda 4000 ga 3500 saku sanda :  $3000 < 3500 < 4000$ .  
3500 goo zenberboŋ 3 nda zenberboŋ 4 game.

### Goy idduwantoo :

Taalibey ma duu zenberboŋ kanj ga man hinnaa ga ka bisa sanda :  
 $6000 < 6742 < 7000$   
(7000 ma man a ka bisa), i ga hantum 7000.  
Taalibey ma goyoo woo cine boobo tee.

### Denden

1. Hinnawey deedandi nda tammaasawey wey :

$< ; > ; =$   
975... 953 ... ; 324 ... 847 ; 487 ... 448 + 39;  
2 246 ... 5 752... ; 7 483... 2 978 ; 39 ... 39  
42 + 25... 38 + 10 ; 506 + 373... 390 + 240 ;  
2 600 + 72... ; 2 612 + 60.

2. Hinnawey wey hantum m'i hanga-hangandi cere ka hun ikaccaa ga ka koy ibeeroo ga

824 ; 700 ; 7539 ; 3492 ; 200 ; 5094 ; 56.

3. Daaroo woo beerandi m'a timmandi.

zangubonjoo kanj goo jine	hinnaa	zangubonjoo kanj goo banda
8 000	8 259	9000
...	203	...
...	1953	...
...	4790	...
7000	...	8000
...	36	...

4. Hinnawey wey toondi iwoyboŋ manantaa ga :

17 ; 48 ; 97 ; 83.

5. Hinnawey wey toondi zangubonjoo manantaa ga  
159 ; 577 ; 237 ; 341.

6. Hinnawey wey toondi zangubonjoo wala zenberboŋ manantaa ga :  
681 ; 4 685 ; 371 ; 5 928 ; 757 ; 5 459.

7. Hinna foo kul saku nda zangubonjoo hinkaa kanj ga hima.

... < 223 < ... ; ... < 495 < ...  
... < 750 < ... ; ... < 106 < ...  
... < 809 < ... ; ... < 689 < ...

8. Hinna foo kul saku nda zenberboŋ hinkaa kanj ga hima.

... < 3228 < ... ; ... < ; ... < 5946 < ...  
< 5074 < ... ; ... < ; ... < 6105 < ...  
< 9867 < ...

**14 Kabu kabila taacaa misey 0 ka koy  
100 000 hinnawey ga**

**Taasiha :** Taaliboo ma hin ka bonhaw feeri kan ra tontonyan wala kaayan wala taabuyan, wala zannayan goo.

**Kabu cahante :** Ka taaba nda 2

1 : Alfagaa ma nee taalibi foo ma 2 taabudaaroo filla.

2 : Alfagaa ga bonhawey wey har, taalibey m'i tee.

- a. Ize 40 bara bonboŋ foolo foo ra. Bonboŋ marje bara foolo 2 ra ?
- b. Poti 50 goo ŋaari saaku ra. Poti marje bara saaku 2 ra ?
- c. Marje ti albanna zaari 2 banaa nda k 1 000 no a ga duu zaari ra ?

Kabey wey tee :

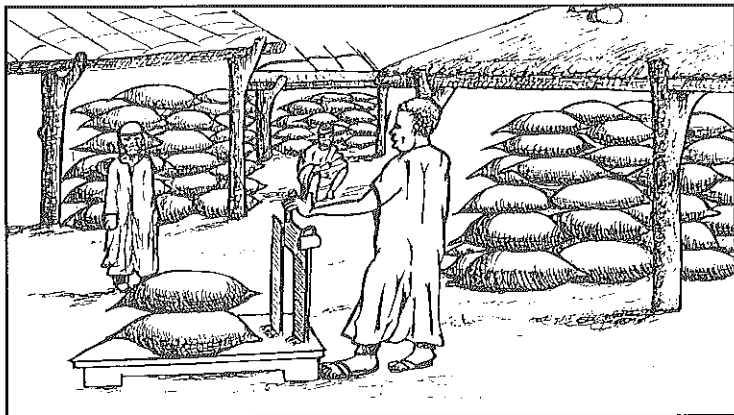
$$147 + 19 + 3 + 1 ; \quad 247 + 54 + 13$$

$$247 + 99 + 3 ; \quad 149 \times 2 - 51 ; 204 + 147 - 47$$

**Goyjinawey :** Taaliboo tiiraa nda alfagaa tiiraa.

**Goyey**

**Goy jinaa :** Bonhaw : Maamalakaw 3 marga ka taasuu day Mawti. Aliyyu na saaku 200 day, Sulay saaku 550, Mahamman saaku 425. Saaku marje no i day cere ra ?



**Bonfeeray fondo :**

saaku (sa) marje no Aliyyu day ?  
saaku marje no Sulay day ?  
saaku marje no Mahamman day ?  
saaku marje no i day cere ra ?  
I day cere ra :  
sa 200 + sa 550 + sa 425 = sa 1 175.

**Goy hinkantoo :** Bonhaw : Maymuna goo nda k 1 583. Anna na nga garaa bana a se : k 547. Maymuna na kunta foo day k 1723.

Marje ka cindi a se ?  
Bonfeeray fondo :  
Marje bara Maymuna se ?  
Kaatibi marje no Anna n'a noo ?  
Kaatibi marje ti nga noorey ?  
Marje no a na kuntaa day ?  
Marje ma cindi a se ?  
Maymuna goo nda :  
k 1 583 + k 547 = k 2 130  
A cindi a se  
k 2 130 - k 1 723 = k 407.

**Goy hinzantoo :** Bonhaw : Moo saaku foo yooboo ra ti k 2 500. Marje ti saaku 3 hayoo ?

**Bonfeeray fondo :**

Marje ti saaku foo hayoo ?  
Marje ti saaku 3 hayoo ?  
Saaku 3 hayoo ti :  
k 2 500 + k 2 500 + k 2 500 = k 7 500  
wala k 2 500 x 3 = k 7 500

**Goy taacantoo :** Bonhaw : Adullaahi na ganbu day k 2 500 nda funeetar 5 kan affoo kul tun a ga k 1 400. Marje ti ngi hayoo ?  
Nooroo si banandi kala handu kul, hala handu 4 hinna follokaa.



Marje no a ga bana handu ra ?

### Bonfeeray fondo :

Marje ti ganboo hayoo ?

Funeetar marje no Adullaahi day ?

Marje ti funeetar foo hayoo ?

Marje ti funeetar 5 hayoo ?

Funeetarey nda ganboo hayoo cere ra ti marje ?

Handu marje ra nooroo woo ga banandi ?

Marje no ma banandi handu foo ?

Funeetarey hayoo ti :

$$k 1\ 400 \times 5 = k 7\ 000$$

Ganboo nda funeetarey hayoo ti :

$$k 7\ 000 + k 2\ 500 = k 9\ 500.$$

A ga bana handu ra :

$$k 9\ 500 : 4 = k 2\ 375.$$

### Denden

1. Njari saaku foo ti k 5 700, hayni saaku ti k 3 750. Marje ti haynoo nda njaroo hayoo cere ra ?

Isa goo nda k 9 848. A ga hin ka duu hayni saaku nda njari saaku wala ?

Marje ma cindi a se wala marje m'a kuma ?

2. Liitar 200 goo jii bargu ra, boro 5 na jiyoo fay bonjaj-bonjaj. Liitar marje no boro foo kul duu ?



3. Aliyyu nda Muusa na feeji foo day k 6 500 nda hancin foo k 3 420 ngi hooraa se. Marje no ngi konday-ize 8 affoo kul ga bana ?

4. Menaka koyraa ra, boro 9 405 ka hantum wotaa se. Boro 7 001 ka wote. Boro marje ka mana wote Menaka koyraa ra? Ir nkuwawey\* duu boro 2 340, marje no ir hunday duu ?

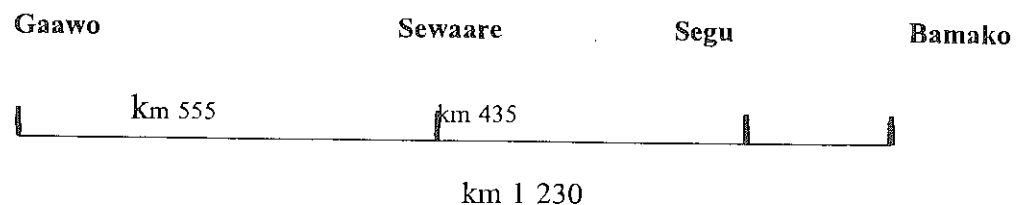
5. Cufoo\* zaaroo hane Ata koyraa ra, haw 1 237 ka kaa. Haw foo kul koyoo ga k 3 bana safaroo se nda k 5 cufukaa se.

Marje ti hawey kul cufu hayoo ?

Marje no Agaleebe ga bana nga haw 100 se ?

6. Gaawo ka koy Bamako fondaa kuuroo ti km 1 230. Gaawo ka koy Sewaare ga sawa nda km 555. Sewaare – Segu ti km 435.

Segu ka koy Bamako ga sawa nda km marje ?



\* nkuway = kanbawaawa (opposition, adversaire)

\* cufu = cansa

**Taasiha :** Taaliboo ma hin :

- ka hinnawey caw, k'i hantum kabu-ize nda harfu ra, ka hun 0 ka koy 100 000 ga ;
- ka kabu-izey dogey bay hinnawey ra 0 ka koy 100 000 ga ;
- ka hinnawey cin, k'i fesu-fesu ka hun 0 ka koy 100 000 ga ;
- ka hinnawey hanga-hangandi cere bande ka hun 0 ka koy 100 000 ga ;
- ka kabu nda 10-10 ; 50-50 ; 100-100 ; 1000-1000 ka hun 0 ka koy 100 000 nda ka hun 100 000 ka yee 0 ga.

**Kabu cahante :**

1. Daaroo woo tee m'a timmandi

+	6 000	2 000	5 000	4 000
1 000	.....	.....	.....	.....
2 000	.....	.....	7 000	.....
3 000	.....	.....	.....	.....

2. Alfagaa ma nee taalibi foo ma 3 taabudaaroo filla
3. Monzonga lokkoloo goo nda kilaasu 3 kañ affoo kul taalibi 40 bara a ra. Taalibi marje bara lokkoloo ra ?

**Bonfeeray :**

Taalibey (ta) hinnaa ti  
 ta  $40 \times 3 =$  ta 120

Alfagaa ga bonhawoo har taalibey m'a tee.  
 Saadu na kalam pake 3 day. Pake foo kul kalam 30 bara a ra.  
 Kalam marje no Saadu day ?

**Goyjinawey :** Jinay kañ ga duwandi.

**Goyey**

**Goy jinaa :**

Hinnawey wey, affoo kul hantum nda kabu-ize :  
 zenber hinka nda zangu hinza nda iwoy cindi guu ;  
 zenber yagga nda zangu hinka nda woy taaci cindi iyye.  
 Wey hantum m'i timmandi :  
 zenberboñ 4, zangubonñ 6, iwoyboñ 2, cindi 3 = .....  
 zenberboñ 9, cindi 3 = .....

**Goy hinkantoo :**

Alfagaa ma nee taalibey ma bonhawoo woo tee.  
 Waalo lokkol-izey hayragey kondaa na kabubayray tiira 10 000 day, a na caw tiira 235 day. Duu tiirawey hinnaa cere ra.  
 Alfagaa ma kate taalibey ma nee kañ tiiraa hinnaa kañ dayandi ti :  
 tiira 10 000 + tiira 235.  
 Alfagaa ma hantum : tiira 10 000 + tiira 235 = tiira 10 235.  
 Alfagaa ma 10 235 caw, a ma nee taalibey m'a caw, i m'a hantum.  
 Alfagaa ma woo tee : 10 000 + 235

$$\begin{array}{r}
 10\ 000 \\
 + \quad 235 \\
 \hline
 10\ 235
 \end{array}$$

Alfagaa ma nee taalibey ma 10 000 nda 235 nda 10 235 hinnawey dam daaroo ra.

**Goy hinzantoo :**

Alfagaa ma nee taalibey ma hinnawey caw : 10 000 ka koy 10 999 ga.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma kaboo woo tee : 10 999 + 1  
 Alfagaa ma hantum : 10 999 + 1 = 11 000  
 Alfagaa m'a caw, a ma nee taalibey m'a caw i m'a hantum.

Alfagaa ma nee taalibey ma hinnayan 11 000 ka koy 99 999 ga, caw ; i m'i hantum nda kabu-ize nda harfu.

**Goy guwantoo :**

Alfagaa ma nee taalibey ma bojhawoo woo tee.  
Menaka konday foo kul duu tiira 10 000. Marje no Menaka konday 10 ga duu ?

Alfagaa ma kate taalibey ma nee kan tiiraa (ti) hinnaa ga hin ka duwandi nda taka hinka :

ti 10 000 + ti 10 000 + ti 10 000 + ti 10 000 + ti 10 000 +  
ti 10 000 + ti 10 000 + ti 10 000 + ti 10 000 + ti 10 000  
wala ti 10 000 x 10.

Alfagaa ma hantum 10 000 x 10 = 100 000

Alfagaa ma 100 000 caw, a ma nee taalibey m'a caw i m'a hantum.

Alfagaa ma hinnaa woo hantum hinnawey daaroo ra.

zenberay			kabu-ize dooney		
za	iw	af	za	iw	af
1	0	0	0	0	0

$$\begin{array}{r}
 \text{Alfagaa ma woo hantum : } 99\,999 + 1 = 100\,000 \\
 \phantom{\text{Alfagaa ma woo hantum : }} 99\,999 \\
 \phantom{\text{Alfagaa ma woo hantum : }} + \phantom{000} 1 \\
 \hline
 \phantom{\text{Alfagaa ma woo hantum : }} 100\,000
 \end{array}$$

- Sorro foo ra 1 goo ?
- Affoo marje bara 100 000 ra ?
- Iwoyboŋ marje ?
- Zanguboŋ marje ?
- Zenberboŋ marje ?
- Alfagaa ma kate taalibey ma nee kan affoo zenber zangu bara 100 000 ra ; iwoyboŋ zenber woy bara 100 000 ; zanguboŋ zenber foo bara 100 000 ra ; zenberboŋ zangu bara 100 000 ra.

**Goy idduwantoo :**

Alfagaa ma kate taalibey ma fesufesuyan dumey wey tee :  
 $98\,765 = (9 \times 10\,000) + (8 \times 1\,000) + (7 \times 100) + (6 \times 10) + 5$   
 $98\,765 = 90\,000 + 8\,000 + 700 + 60 + 5$  wala

$$98\,765 = 98\,000 + 700 + 60 + 5$$

**Goy iyyantoo :**

- a. Hinnawey hangandi cere ka hun ikaccaa ga ka koy ibeeroo ga :  
23 608 ; 8 710 ; 56 014 ; 44 600 ; 99 999 ; 90 709 ; 18 420
- b. Hinnawey hangandi cere ka hun ibeeroo ga ka koy ikaccaa ga  
88 972 ; 45 297 ; 10 324 ; 52 677 ; 95 000 ; 11 825.

**Goy yaahantoo :**

- a. Kabu nda 10 - 10  
ka hun 10 000 ka koy 10 300  
ka hun 23 000 ka koy 23 300  
ka hun 54 200 ka yee 54 000  
ka hun 72 300 ka yee 72 000
- b. Kabu nda 100 - 100  
ka hun 93 700 ka koy 94 600  
ka hun 94 600 ka yee 93 600
- c. Kabu nda 1 000 - 1 000  
ka hun 43 300 ka koy 57 300 ga  
ka hun 90 000 ka koy 99 000 ga  
ka hun 99 000 ka yee 90 000 ga  
ka hun 57 000 ka yee 43 000 ga

**Denden**

- 1. Hinnawey hantum daaroo ra.  
63704 ; 30625 ; 10303 ; 47005 ; 99720 ; 100 000
- 2. Hinnawey hantum nda harfu.  
1345 ; 47502 ; 63620 ; 2111 ; 77777 ; 50408
- 3. Hinnawey hantum nda kabu-ize
  - zenber woy cindi taaci nda igguu
  - zenber yaaha nda zangu guu nda woytaaci cindi foo
  - zenber wooyaaha cindi yagga nda zangu foo nda iwoy cindi hinza
  - zenber wooye cindi foo nda zangu hinka nda iwoy.

4. Hinnawey cin

$15\ 390 + \dots + 2\ 345 = 23\ 450$   
 $28\ 500 + 4\ 730 = \dots$   
 $70\ 001 + \dots = 84\ 310$   
 $60\ 915 + \dots = 99\ 009$   
 $16\ 350 + 1\ 490 = \dots$

5. Hinnawey wey fesu-fesu sanda

$70\ 592 = (10\ 000 \times 7) + (100 \times 5) + (10 \times 9) + 2$   
 $70\ 592 = 70\ 000 + 500 + 90 + 2$   
 $96\ 450 ; 1\ 739 ; 71\ 950 ; 96\ 831 ; 73\ 905.$

6. Hinnawey deedandi nda tammaasawey wey affoo :

> ; < ; =

$3\ 704 \dots 4\ 520$   
 $275 \dots 2\ 005$   
 $8\ 867 \dots 8\ 864 + 3$   
 $52\ 724 \dots 52\ 723$   
 $41\ 683 \dots 47\ 673$   
 $58\ 210 + 100 \dots 58\ 310.$

7. 97 632 hantum hinnawey daaroo ra :

- ma zenberwoyboŋey kabu-izoo cebe ;
- ma zenberboŋey affowey kabu-ize cebe ;
- ma zanguboŋey kabu-izoo cebe ;
- ma iwoyboŋey kabu-izoo cebe ;
- ma affowey kabu-izoo cebe.

8. Yee denden 7<sup>ntoo</sup> ga hinnawey wey : 50 243 ; 17 001 ; 14 204

9. Hinnawey wey, affoo kul ra :

- zenberboŋey hinnaa hantum
- zanguboŋey hinnaa hantum
- iwoyboŋey hinnaa hantum
- affowey hantum

**0 ka koy 100 000**  
**hinnawey bisaceraa**

**Taasiha :** Taaliboo ma hin :

- ka hinnawey hanga-hangandi cere bande ka hun ikaccaa ga ka koy ibeeroo ga wala ka hun ibeeroo ga ka yee ikaccaa ga ;
- ka hinna saku nda zenberboŋ hinka kaŋ goo cere bande ;
- ka hinna sasawandi nda zanguboŋ wala nda zenberboŋ.

**Kabu cahante :** Ka taaba nda 4

1. Alfagaa ma nee taalibi foo ma 4 taabudaaroo filla.
2. Walha ize 120 bara pake foo ra. Walha ize marje bara pake 4 ra ?
3. Gaawo laamaa, komin 4 bara a ra. Komin foo kul lokkol 35 goo a ra. Lokkol marje bara Gaawo laamaa ra ?
4. Suley looraa na kilomeetar 1523 zuru cee 4. Kilomeetar marje no a n'a zuru ?

**Daarey wey berandi m'i timmandi**

+	20 000	40 000	10 000
50 000	70 000	.....	.....
30 000	.....	.....	.....
90 000	.....	.....	.....

+	10 000	20 000	70 000	50 000
10 000	.....	.....	.....	.....
20 000	.....	.....	90 000	.....
30 000	.....	.....	.....	.....

+	60 000	30 000	10 000
40 000	.....	.....	50 000
30 000	.....	.....	.....
10 000	.....	.....	20 000

**Goyey**

**Goy jinaa :** Hinnawey wey hanga-hangandi cere bande ka hun ikaccaa ga ka koy ibeeroo ga.

13 839 ; 99 139 ; 100 000 ; 79 348 ; 16 001 ; 16 732.

Hinnawey wey hanga-hangandi cere bande ka hun ibeeroo ga ka koy ikaccaa ga.

13 348 ; 29 479 ; 19 001 ; 100 000 ; 97 301 ; 81 003.

**Goy hinkantoo :** Hinnawey deedandi nda iwoyboŋ hinkaa wala zanguboŋ hinkaa wala zenberboŋ hinkaa kaŋ ga man ey ka bisa cerey.

13615 ; 3 248 ; 13 803 ; 35 ; 10 415.

Hinnawey wey saku nda zenberboŋ hinka kaŋ goo cere bande :

Sanda :  $0 < 943 < 1000$   
23 435 ; 79 832 ; 9 234 ; 34 591 ; 10 000.

Dimmawey saku nda zangu boŋ hinka kaŋ goo cere bande.

Sanda :  $90 < 32 + 67 < 100$   
 $200 < 100 + 105 < 210$

Ma nee : Iri nka dimmawey (32 + 67) nda (101 + 105) saku nda iwoyboŋ hinka.

340 + 125 ; 138 + 131 ; 1 297 + 23 450 ; 74 238 + 11.

**Goy taacantoo :** Wa hinnawey sasawandi nda zanguboney, wala zenberboŋey kaŋ ga man ey.

Sanda : 47 ga baa ka sawa nda 50  
2350 ga baa ka sawa nda 2400  
73 834 ; 99 240 ; 34 206 ; 34 238 ; 56 748.

### Denden

1. Hinna hinkawey wey deedandi nda  $<$  wala  $>$ .

15 842 .... 24 615  
25 348 ... 25 349  
26 001 ... 26 104  
24 341 ... 24 890  
12 314 ... 11 315.

2. Hinnawey hangandi cere bande ka hun ikaccaa ga ka koy ibeeroo ga.

6815 ; 2603 ; 31438 ; 48971 ; 90000 ; 31461.

3. Hinnawey hangandi cere bande ka hun ibeeroo ga ka koy ikaccaa ga.

23 943 ; 91 832 ; 76 201 ; 18 349 ; 56 347.

4. Hinnawey saku nda zenberboŋ hinka kaŋ goo cere bande.

29 431 ; 31 943 ; 24 310 ; 79 000.

5. Dimmawey wey saku nda zanguboŋ hinka.

48 + 76 ; 39 + 1 + 11 ; 143 + 5 ; 48 + 1 + 10 ; 26 + 24.

## Kabu kabila taacaa misey 0 ka koy 100 000 hinnawey ga

**Taasiha :** Taaliboo ma hin ka boŋhaw feeri kaŋ ra tontonyan wala kaayan, wala taabuyan, wala zemnayan goo.

**Kabu cahante :** Tontonyan alhaaley : doobarmay\*  
Daarey wey berandi m'i timmandi.

x	15	7	9	81
100	.....	.....	900	.....

x	45	300	12	145	75
100	4 500	.....	.....	.....	.....

**Goyjinawey :** Taaliboo tiiraa nda alfagaa tiiraa.

**Goyey :**

**Goy jinaa**

**Boŋhaw.** Saydu na kalam foo day k 15, a na tiira day k 45.

Marje ti i kul hayoo.

**Boŋfeeray fondo**

I kul hayoo ti :

$$k 15 + k 45 = k 60$$

$$\text{wala } k 45 + k 15 = k 60$$

Laasaabu :  $k 45 + k 45 = k 45 + k 15$ .

Tontonyan alhaaley ra, woo se i ga nee doobarmay.

\* doobarmay : commutativité

**Denden :** Tontonyaney wey ra, hinnawey dogey ka cere barmay :

$$70 + 40; 25 + 75; 50 + 49$$

**Laasaabu :**  $k 15 + h 45 = k 45 + k 15$

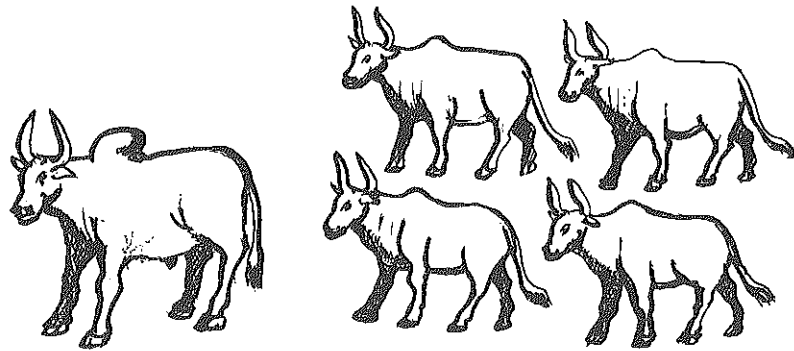
Tontonyan alhaaley ra woo se i ga nee doobarmay.

$$70 + 40; 25 + 75; 50 + 49.$$

**Goy hinkantoo :**

**Bonhaw.** Maamalakaw foo na k 90 000 ka koy Kikara almaaney yooboo ra. A na yaaru foo day k 35 000, a na zanyan day k 40 000. Marje ti hawey kul nooroo cera ra ?

Marje ma cindi maamalakaa se ?



**Bonfeeray fondo :**

Macin no maamalakaa day ?

Marje ti yaaroo nda zaney hayoo cere ra ?

Marje nda maamalakaa koy yooboo ra ?

Kaatibi marje ka cindi a se ?

**Bonfeeray**

Hawey kul nooroo cere ra ti :

$$k 35 000 + k 40 000 = k 75 000$$

A ga cindi a se :

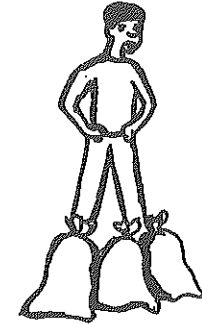
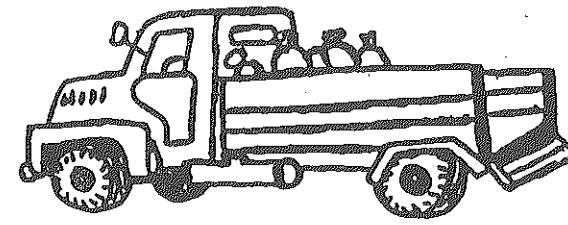
$$k 90 000 - k 75 000 = k 15 000$$

**Goy hinzantoo :**

**Bonhaw.** Seeku nda Sumayla na k 33 750 sanba ka taas day Mowti. Saaku 9 ka kaa, kan kul ga sawa.

Marje ti saaku foo hayoo ?

Nda Sumayla duu saaku 3 kaatibi marje no a n'a sanba ?



**Bonfeeray fondo :**

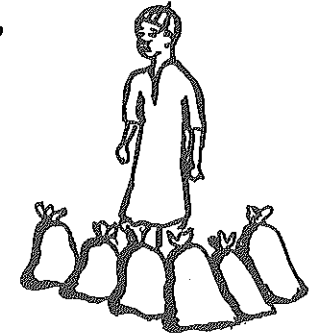
Kaatibi marje no Seeku nda Sumayla sanba ?

Saaku marje no ka kaa ?

Marje no saaku foo kul tun i ga ?

Saaku marje no Sumayla duu ?

Adisi, marje no Sumayla n'a sanba ?



**Bonfeeray :**

Saaku foo hayoo ti

$$k 33 750 : 9 = k 3 750$$

Nooroo kan Sumayla n'a sanba ti

$$k 3 750 \times 3 = k 11 250.$$

**Denden**

1. Hawoy goo nda gorgo jaa 9 kan affoo kul na ize 25 fonbu. Gaboo na ize 22 zaa i ra. Gorgo-ize marje ka cindi Hawoy se ?
2. Muusa koy yooboo ra nda k 43 500 ; a na taas day k 21 500 nda darbay k 3 796 nda araji k 4800. Marje ka cindi a se ?
3. Beerumaa se, Yuunusa na šaari day k 10 000 nda yeeji hinka. Ibeeroo tun a ga k 15 500, ikaccaa k 13.700. Marje no jinaa nda hawey kul tun a ga ?
4. Sanba goo nda hancin jaa 45. 20 kul na ize hinka-hinka hay. Cindey duu ize foo-foo. Marje ti Sanba hancin janey nd'izey cera ra ?
5. Bugubeeri tiirahugoo cattakasiney na tiirayan. sanba a se : kabubayray tiira 45 733 ; dawbayray tiira 22 941 ; taariki tiira 17 554. Tiirawey ra, tiira 83 678 ma taaga, i na izeeney dam ceesi beeri 6 ra kan ga sawa beeriyan. Tiira marje bara ceesi foo ra ?

## 0 ka koy 1 000 000 hinnawey ga

**Taasiha :** Taaliboo ma hin :

- ka hinnawey hantum nda harfu nda kabu-ize ka hun 0 ka koy 1 000 000 ga ;
- ka kabu-ize foo kul dogoo bay hinna ra ;
- ka hinna cin wala k'a fesu-fesu ;
- ka hinnayan deedandi nda k'i hangandi cere ;
- ka hinna saku nda iwoyboŋ, zanguboŋ wala zenberboŋ ;
- ka kabu nda iwoy-woy nda zangu-zangu, nda zenber-zenber.

**Kabu cahante :** Ka hinna timmandi 10 ; 100 ; 1000.

1. Marje ma tonton 6 ga a ma sawa nda 10 ?
2. Isa goo nda feeji boŋ 83. Marje ma Isa feejeje kuma i ma too 100 ?
3. Hancin foo ga day k 1000 Kuumayra yooboo ra. Marje ma Maadu kuma a ma duu hancin foo zama k 750 bar'a se ?

**Goyjinawey :** Jinay kan ga duwandi koyraa ra.

**Goyey**

**Goy jinaa :** Daaroo woo hinnawey kan hantumandi a ra caw, m'i hantum nda kabu-ize nda harfu.

zenberboŋey			kabu-ize dooney		
za	iw	af	za	iw	af
3	6	1	7	2	9
9	9	9	9	9	9

Hinna foo kul ra ir ma :

- zenber foo boŋey kabu-izoo har ;
- zenber woy boŋey kabu-izoo har ;
- zenber zangu boŋey kabu-izoo har ;

**Denden :**

- a. Hinnawey hantum nda harfu : 352 876 ; 675 930.
- b. Hinnawey hantum nda kabu-ize : zenber zangu yaahaa nda woyyaaha cindi hinza ;
  - zenber zangu hinza nda zenber yaaha nda zangu nda waranka
- c. Duu hinnaa woo ra : 32 967
  - zenber woyey kabu-izoo ;
  - zangey kabu-izoo ;
  - affowey kabu-izoo ;

**Goy hinkantoo :**

a. Ir ma hinnaa woo fesu-fesu :  
 $361\ 729 = 300\ 000 + 60\ 000 + 1\ 000 + 700 + 20 + 9$   
 Ir ma hinnaa woo cin.

b. Zenber zanguboŋ 3, zanguboŋ 7, iwoyboŋ 8, affowey 1  
 $= 300\ 781.$

**Denden :** Hinnawey fesu-fesu :  
 352 876 ; 999 999

Hinnaa woo cin : zenberboŋ 925, zanguboŋ 3, iwoyboŋ 5, affowey 2

**Goy hinzantoo :** Geeji-hawsa jiiri hinza hegaa ne :

Jiiri jinaa kg 514 690 ;

jiiri hinkantoo kg 88 193 ;

jiiri hinzantoo kg 562 719.

88 193 kabu-izey hinnaa kacca nda 514 690 ; a kacca nda 562 719 waney.

Yaa din ga :  $88\ 193 < 514\ 690$  ;  $88\ 193 < 562\ 719$

514 690 nda 562 719 zenber zanguboŋey kul ti affoo.

Zenber woyey kabu-ize ga fay :  $1 < 6.$

Saa din  $514\ 690 < 562\ 719.$

Yaa din ga  $88\ 193 < 514\ 690 < 562\ 719.$

Jiiri hinzantoo hegaa ka bisa i kul.

**Denden** : Hinnawey hanga-hangandi cere bande ka hun ikaccaa ga ka koy ibeeroo ga, ma filla ka hun ibeeroo ga ka zunbu ikaccaa ga. 76 275 ; 671 160 ; 6 120 ; 660 ; 198 840 ; 77 532.

**Goy taacantoo** : Alfagaa nda taalibey ma hinnawey saku nda zenberboŋ wala zanguboŋ wala iwoyboŋ.

Sanda : iwoyboŋ ga : 198 180 < 198 185 < 198 190 ;  
 zanguboŋ ga : 198 100 < 198 185 < 198 200 ;  
 zenberboŋ ga : 198 000 < 198 185 < 199 000.

**Denden** : Hinnawey saku nda zenberboŋ hinka kaŋ ga hanga cere : 5 470 ; 864 098

**Goy guwantoo** : Alfagaa nda taalibey ma kabu nda :

- iwoy-woy (10) : 1 600 hala 1 700
- zangu-zangu (100) : 58 000 ka koy 60 000
- zenber-zenber (1 000) : 10 000 ka koy 100 000

**Goy idduwantoo** : Alfagaa ma nee taalibey ma kaboo suka k'a tee  $999\,999 + 1 = 1\,000\,000$ .

Alfagaa nda taalibey ma hantum kabu daaroo ra.

miliyoŋey			zenberey			kabu-ize dooney		
za	iw	af	za	iw	af	za	iw	af
		1	0	0	0	0	0	0

I m'a caw, i m'a hantum nda harfu, i ma hantum kabudaaroo se taray.

- I ma duu nga kabu-izey hinnaa. Man se affoo goo miliyoŋ foo ra ?
- Zenberey affowey marje bara 1 000 000 ra ?
- Zenberey iwoyey marje bara 1 000 000 ra ?
- Zenberey zangey marje bara 1 000 000 ra ?

## Denden

1. Hinnawey fesu-fesu : 352 876 ; 675 930 ; 999 999
2. Hinnawey hantum nda harfu : 798 972 ; 345 297 ; 617 800 ; 312 002.
3. Hinnawey hantum nda kabu-ize :
  - zenber zangu taaci nda zenber wooyagga cindi hinza nda waranka ;
  - zenber zangu hinka nda zenber wooyaaha cindi yaaha nda zangu foo nda iwoy cindi iyye ;
  - zenber zangu hinza nda zenber waranka cindi yagga nda zangu nda wooye cindi guu.
4. Hantumoo tee m'a timmandi :
  - zenberey ...zangey ...iwoyey ... nda affowey 9 = 495 849
  - zenberey ...zangey ... iwoyey ... nda affowey ... = 218 206
  - zenberey ...zangey ...iwoyey ...nda affowey 3 = 145 043
5. Hinnawey hantum ma tammaasaa kaŋ ga hima dam gamey ra :  
 < nda >  
 $16\,605 \dots 15\,660 ; 129\,000 + 300 \dots 192\,000 + 100 ;$   
 $60\,000 + 100 + 5 \dots 60\,000 + 400 + 1 ;$
6. Hinnawey hanga-hangandi ka sintin nda ikaccaa ka koy ibeeroo ga 76 275 ; 671 160 ; 198 840 ; 77 532.
7. Hinnawey saku nda zanguboŋyaŋ kaŋ ga hanga.  
 5 470 ; 9 806 ; 75 985 ; 864 098 ; 261 596 ; 470 521.
8. Hinnawey hantum nda zangu-zangu  
 125 000 ka koy 130 000.
9. Hinnawey cin :  
 Zenberboŋ 300 nda zanguboŋ 7 nda iwoyboŋ 8 nda affowey 1 =  
 Zenberboŋ 258 nda zanguboŋ 1 nda iwoyboŋ 0 nda affowey 7 =



## 0 ka koy 1 000 000 hinnawey bisacaraa

**Taasiha :** Taaliboo ma hin :

- ka hinnayan deendandi zenberboŋ nda zanguboŋ hinka kaŋ ga hanga ra ;
- ka hinnayan hangandi cere bande ka hun ikaccaa ga ka koy ibeeroo ga wala ka hun ibeeroo ga ka koy ikaccaa ga ;
- ka hinna saku nda zangubonyan kaŋ goo cere bande wala zenberboŋyan kaŋ goo cere bande ;
- ka hinna sasawandi iwoyboŋoo, zenberboŋoo wala zanguboŋoo kaŋ ga man a.

**Kabu cahante :** Ka hinna timmandi 10 ; 100 ; 1000. (filla) Aliyyu baaba n'a noo bonboŋ ize 7. Marje ma Aliyyu bonboŋey kuma i ma sawa nda 10 ?

**Bonfeeray :** Hinnaa kaŋ ga Aliyyu bonboŋey kuma i ma sawa nda 10 ti.

$$7 + - ? = 10 \qquad 10 - 7 = 3$$

Hinnawey timmandi 100 : 14 ; 57 ; 75 ; 81

Hinnawey timmandi 1000 : 147 ; 607 ; 201 ; 708 ; 904.

Daarey wey berandi m'i timmandi.

+	300 000	100 000	400 000	200 000
200 000	.....	.....	600 000	.....
400 000	.....	.....	.....	.....
600 000	.....	700 000	.....	.....

+	100 000	400 000	500 000
500 000	.....	900 000	.....
300 000	.....	.....	.....
400 000	.....	.....	.....
200 000	.....	.....	700 000

1. Ali goo nda moo saaku 6. Marje ma nga saakey kuma i ma too 10 ?
2. Isa duu hancin boŋ 65. Marje ma nga hanciney kuma i ma too 100 ?
3. Faati goo nda k 850, a na feeji hacci k 1000. Marje m'a kuma a ma duu feejoo ?

**Goyjinawey :** Jinay kaŋ ga duwandi koyraa ra.

**Goyey**

**Goy jinaa :** Alfagaa nda taalibey ma hinnawey deendandi nda tammaasawey < wey > :

125 nda 247 ; 261 nda 370 ; 143 nda 480 ; 2 647 nda 7823 ; 948 315 nda 746 348.

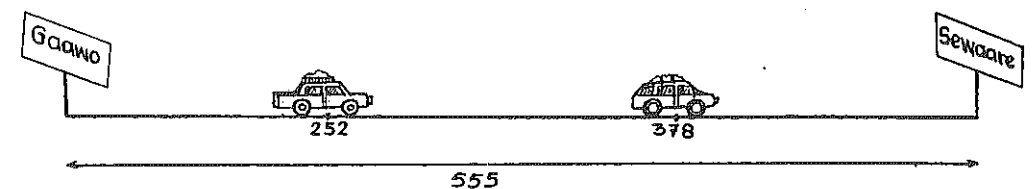
**Goy hinkantoo :** Alfagaa nda taalibey ma hinnawey hanga-hangandi cere bande ka hun ikaccaa ga ka koy ibeeroo ga, i ma filla k'i hanga-hangandi ka sintin nda ibeeroo ka yee ikaccaa ga.

**Goy hinzantoo :** Isa nda Amadu hun Gaawo guuru iddu ga ka koy Sewaare. Fonda kuuyanoo ga sawa nda kilo 555. Kaŋ guuru woy ga too, Isa na kilo 378 zur, Amadu na kilo 252 zur.

Guuru woy ga kilo marje ka cindi Isa se ?

Kilo marje ka cindi Amadu se ?

Boro foo kul hinnaa kaŋ a na zur sasawandi nda iwoyboŋoo kaŋ ga man a.



## Laasaabu :

- Hinnawey kañ i n'i zur  $250 < 252 < 260$   
252 ga man 250 ka bisa 260 : ir m'a sasawandi 250 ga :  
 $370 < 378 < 380$   
378 ga man 380 ka bisa 370 ; ir m'a sasawandi 380 ga.  
Ir na 252 nda 378 sasawandi iwoyboñey ga kañ ga man ey.

### Himakasine :

- 742 ir m'a sasawandi iwoyboñoo ga kañ ga man a.
- $740 < 742 < 750$
- 742 ga man 740 ka bisa 750.  
Ir ma 742 sasawandi zanguboñoo ga kañ ga man a  
 $700 < 742 < 800$   
742 ga man 700 ka bisa 800.  
786 365 ir m'a sasawandi zenberboñoo ga kañ ga man a.  
 $786\ 000 < 786\ 365 < 787\ 000$   
786 365 ga man 786 000 ka bisa 787 000  
786 365 ir m'a sasawandi zenber woyboñoo ga kañ ga man a.  
 $780\ 000 < 786\ 365 < 790\ 000$   
786 365 ga man 790 000 ka bisa 780 000.  
786 365 ir m'a sasawandi zenber zanguboñoo ga kañ ga man a.  
 $700\ 000 < 786\ 365 < 800\ 000$   
786 365 ga man 800 00 ka bisa 700 000.  
Ir ma tontonyanoo woo zimam ka dii :  
 $132 + 267$  a ga koy hima nda :  
 $130 + 270 = 400$   
 $100 + 300 = 400$ .

**Goy taacantoo :** Alfagaa nda taalibey ma hinnawey saku nda iwoy taabariyañ kañ ga hanga cere.

Sanda :  $40 < 47 < 50$   
 $280 < 286 < 290$   
 $3\ 400 < 3\ 413 < 3\ 500$   
 $6000 < 6\ 215 < 7000$ .

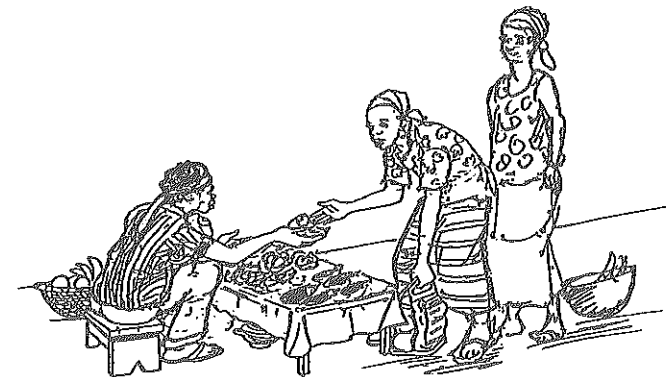
**Goy guwantoo :** Alfagaa nda taalibey ma hinnayañ saku nda iwoy taabariyañ.

Sanda :  $90 < 32 + 67 < 100$

Ir ma  $327 + 164$  nda  $101 + 105$  saku nda iwoy taabariyañ kañ ga hanga cere.

## Denden

1. Tammaasaa kañ ga hima, dam hinnawey wey gamey ra :  
> wala <.  
 $64 \dots 78$  ;  $1\ 466 \dots 6\ 415$  ;  $2\ 240 \dots 2\ 140$  ;  
 $127\ 625 \dots 327\ 420$  ;  $49\ 000 \dots 40\ 800$  ;  
 $666\ 748 \dots 866\ 855$  ;  $20\ 324 \dots 19\ 324$ .
2. Hinnaa sasawandi iwoyboñey nda zanguboñey wala zenberboñey ga kañ ga man a.  
 $128$  ;  $541$  ;  $87\ 280$  ;  $6\ 798$  ;  $7\ 608$  ;  $6\ 732$ .
3. Dimmawey zimam iwoyboñ ga, zanguboñ ga wala zenberboñ ga.  
 $247 + 478$  ;  $789 + 695$  ;  $6\ 326 + 4\ 235$  ;  $56\ 402 + 42\ 289$   
 $661\ 768 + 548\ 624$ .
4. Hinnawey sasawandi zanguboñoo, zenberboñoo wala zenber woyboñoo ra kañ ga man hinna foo kul.  
 $1\ 673$  ;  $13\ 275$  ;  $656\ 543$  ;  $13\ 647$  ;  $1\ 831$ .
5. **Boñhaw :** Ahamadu na šuuyañ neere k 705 a filla ka oberzinyañ neere k 400. Marje no a duu a ?



**Misey kaɗ ra kabu taacaa ga tee 0 ka koy 1 000 000**

**Taasiha :** Taaliboo ma hin ka miseyaɗ tee kabu kabila taacaa ga.

**Kabu cahante :** Ka 9, 19, 29, 99 tonton hinna ga. Saadu goo nda haw 12, a filla ka haw 9 day. Marje ti Saadu hawey ?

**Laasaabu fondo :**

Saadu hawey hinnaa ti :  $12 + 9$   
 Nda ir ga baa ka caħã ir ga  $12 + 10$  ga, zama 9 ti  $10-1$ . Woo ti :  
 $12 + 9 = 12 + 10 - 1$   
 Affaa kaɗ ir n'a tonton 9 ga ir g'a kaa 22 ra. Saa din  $22-1 = 21$   
 Nda ir ga 9 wala 19 wala 29 wala 99 tonton hinna tana ga, iri mma 10 wala 20 wala 30 wala 100 tonton hinnaa ga, ir ma affoo kaa dimmaa ra.

1. Cawhugu foo ra aru-ize 29 nda woy-ize 24 goo. Marje ti cawhugoo taalibey hinnaa ?
2. Baazi-gurma kurkaw foo goo nda feeji 50 nda hancin 19. Marje ti nga almaney hinnaa ?
3. Daarey wey berandi, m'i timmandi.

x	2	3	6	50
1 000	....	....	....	50 000

x	7	4	75
1 000	7 000	....	....

x	100	35	6	25	7
10 000	.....	350 000	.....	.....	.....

4. Kabey wey tee  
 $70 \times 10.000 ; 10.000 \times 10.000 ; 75 \times 10.000 ; 91 \times 10.000$

**Goyjinawey :** Jinay kaɗ ga duwandi koyraa ra.

**Goyey**

**Goy jinaa :** Ali baaba n'a noo k 110, jaɗoo n'a noo k 63. Kaatibi marje no Ali duu. A na taami day k 95, marje ka cindi Ali se ?  
 Alfagaa nda taalibey ma bonfeeraa tee.

**Laasaabu fondo :**

Marje no Ali baaba n'a noo ? (k110)  
 Marje no jaɗoo n'a noo ? (k 363)  
 Macin no i n'iri haã nda ?  
 Marje no a na taamey day ? (k 95)

<u>Bonfeeray</u>		<u>dimma</u>		<u>kabu dumi</u>
Hinnaa kaɗ Ali duu a				110    173
k 110 + k 63	=	k 173	+	63    - 95
Hinnaa kaɗ cindi Ali se				
k 173 - k 95	=	k 78		173    78
Zaaboo : k 78				

**Goy hinkantoo :**

**Bonhaw :** Aru foo na kokonda foo day kaɗ ra mangoro ize 194 goo nda affoo tana kaɗ ra 266 goo. Mangoro ize marje no a day ?  
 Mangoro ize foo kul dayandi k 5. Marje ti nooroo hinnaa kaɗ a n'i neere ?  
 A na mangorowey zemna nga zanka guu game.  
 Mangoro marje no zanka foo kul duu ?  
 Goyoo ma tee goy jinaa alhaaloo bande.

## Denden :

1. Ir Teesi kondaa looroo si hin ka zaa kala kg 9 900 jinay. I na ŋaari kg 7500 dam a ra, nda sukar kg 450. Jinay kg marje no ma hin ka tonton a ga ?
2. Hamma na hii 4 kar, hii foo kul koyoo n'a bana k 4500. Marje no Hamma duu hiyey ra ?  
A na nooroo ka koy yooboo ra, a na darbay meetar 37 day alaayaney se, meetar foo kul k 200. Marje ka cindi Hamma se ?
3. Hawoy koy Tondigame yooboo ra nda k 400, a na cirawbi foo day k 180, nda albasar kg 5 ka gar kg foo kul ti k 40. A ga baa ka gorgo foo day kaŋ hayoo ti k 150. Marje no m'a kuma ?
4. Ahamadu zaari duuraa ti kaatibi 150. Handu ra (jirbi 30), a ga k 500 bana hugu hay, a ga k 2500 taasuu day. Marje ma cindi a se nga banaa ra ?
5. Tašaaran sardiŋa koy foo na guuru sankay meetar 8 day k 2800. Marje ti meetar foo kul hayoo ?
6. Isa koy Gindigata yooboo ra nda hancin foo nda feeji 3. Feeji foo kul day : k 2500, hancinoo duu k 1700. Marje noo Isa duu almaney ra ? A na basan meetar 6 day k 2400. Marje ti basan meetar foo kul hayoo ? Marje ka cindi Isa se ?
7. Agaali koy Saa yooboo ra nda moo saaku 5. Saaku foo kul mudi 32 bar'a ra. Mudi marje ti Agaali moowaa ? A na moowaa neere a duu a ra k 20000. A na darbay meetar 8 day, meetar foo kul k 450. Marje ti darbaa day hayoo ? Marje ka cindi Agaali se ?

**Taasiha :** Alfagaa ma nee taalibey ma dendeneey nda boŋhawey tee :

## Kabu cahante

- Dimmawey bisaceraa zimam zanguboŋ ra :  
 $473 - 251 =$   
 $225 + 141 =$
- Hinnawey saku nda zenberboŋ :  
 $47\ 524 ; 824\ 165$
- Hinnawey timmandi 1000 :  
 $865 ; 960$
- Hinnawey timmandi 100 :  
 $80 ; 74.$

## Denden

1. Hinnawey hantum nda harfu :  
 $948\ 736 ; 765\ 358 ; 248\ 365 ; 27230 ; 348 ; 54.$
2. Hinnawey hantum nda kabu-ize :
  - zenber zangu hinza nda zenber waranza cindi yaaha nda zangu taaci nda woydu cindi foo ;
  - zenber zangu hinka nda zenber woyguu cindi hinka nda zangu iddu nda waranka cindi taaci ;
  - zenber woyye cindi iddu nda zangu hinza nda woytaaci cindi yaaha ;
  - zenber waranka cindi iyye nda zangu iddu nda waranza cindi hinka ;
  - zenber iyye nda zangu hinka nda woytaaci ;
  - zenber hinza nda zangu nda woydu cindi hinka ;
  - zangu iyye nda woydu cindi yagga ;
  - zangu taaci nda woyguu cindi foo ;
  - woyye cindi hinza ;
  - iwoy cindi yaaha.

3. Hinna fesu-fesantey wey hantum nda kabu-ize,
  - zenberboŋ 500 zanguboŋ 4 iwoyboŋ 1 affowey 7 ;
  - zenberboŋ 147 zanguboŋ 9 iwoyboŋ 3 affowey 2 ;
  - zenberboŋ 25 zanguboŋ 7 iwoyboŋ 8 affowey 4 ;
  - zenberboŋ 3 zanguboŋ 5 iwoyboŋ 6 affowey 0 ;
  
4. Hinnawey hantum m'i timmandi.
  - zanguboŋ ... iwoyboŋ... nda affowey 4 = 954
  - zenberboŋ 7 zanguboŋ ... iwoyboŋ ...nda affowey... = 7 546
  - zenberboŋ ... zanguboŋ ...iwoyboŋ ...nda... affowey ... = 12 583
  - zenberboŋ ... zanguboŋ ... iwoyboŋ ...nda affowey... = 273 349
  
5. Hinnawey fesu-fesu nda zenberboŋ, zanguboŋ nda iwoyboŋ nda affowey.
 

978 ; 3 584 ; 1 384 ; 13 239 ; 639 148 ; 88 934 ; 136 703.
  
6. Tammaasaa kaŋ ga hima, dam hinnawey game.
 

< ; >

658 ... 276 ; 261 ... 934 ; 1 948 ... 3 151 ; 7 876 ... 3 179  
 19 948 ... 24 875 ; 87 121... 13 124 ; 147 674... 358  
 121 ; 876374...; 274 924 ; 98 ... 78 ; 56 ... 77 ; 670 ...  
 607.
  
7. Hinnawey saku nda iwoyboŋ hinka
 

78 ; 145 ; 1 826 ; 15 673.
  
8. Hinnawey saku nda zanguboŋ hinka
 

148 ; 239 ; 876 ; 4 315 ; 14 728 ; 158 904.
  
9. Hinnawey saku nda zenberboŋ hinka.
 

3 158 ; 4 025 ; 7 901 ; 12 169 ; 15 048 ; 748 036.
  
10. Hinnawey sasawandi iwoyboŋoo ga, wala zanguboŋoo ga wala zenberboŋoo ga kaŋ ga man affoo kul ka bisa cindey.
 

49 ; 72 ; 321 ; 654 ; 3 156 ; 7 831 ; 12 730 ;  
 86 124 ;  
 176 624 ; 348 241.

11. Kabey suka m'i tee
 

1 805 + 269 ; 5 728 + 1 436 ; 6 421 - 3 127 ;  
 99 653 - 827 ; 180 460 - 52 727 ;  
 1 722 + 607 40 + 244 315 ; 562 x 4 ; 8 136 x 5 ;  
 572 x ; 1 650 x 8 ; 437 : 6 ; 12 258 : 4 ; 15 207 : 8

### Bonhaw

1. Aru foo ga duu k 39 000, nga goyoo ra a ga k 18 500 kayandi nga ŋaahayaa se, a ga k 12 000 kayandi nga hugu hayoo se, almušakka buuney se a ga k 4 500 kayandi.  
 Marje ti hinnaa kaŋ ga hun a ga ? Marje ma cindi a se ?
  
2. Zanka hinza baa ŋgi ma guurubari foo day kaŋ hayoo ti k 4 865. Zanka jinaa na k 1360 bana, ihinkantoo na k 1185 bana, ihinzantoo na k 1 090 bana. Ŋgi nooroo ga hin k'i noo guurubaryoo wala ? Nda a si too ra marje m'i kuma ?

**Borghawey**

# Bayray dunbo sasawandiyan\* ra

**Taasiha :** Taaliboo ma hin :

- ka duu sasawandiyan misey ra, bayray dunbo ;
- ka miseyaŋ kaŋ ra sasawandiyan goo, tee.

## Kabu cahante

Taaba nda 2 ; 3 ; 4 ; 5.

Kabey wey tee : 2 x 4 x 8 ; 3 x 2 x 7

a. Kabu nda zangu-zangu :

- ka hun 1 700 ka koy 6 700 ga ;
- ka hun 1 700 ka koy 6 700 ga ;
- ka hun 6700 ga ka zunbu 1 700 ga

b. Kabu nda zenber-zenber :

- ka hun 3 500 ka koy 9 500 ga ;
- ka hun 9500 ga ka yee 3 500 ga.

**Goyjinawey :** Guuru guli\*, wali-ize, kangaw-ize, teenay guli, nooru guuru nda fita

**Goyey :**

**Goy jinaa :**

Alfagaa ma kate taalibey ma jinayyaŋ bar.

Himakasine : Alfagaa ma bik 1 bar kiryoŋ 2.

A ma bonboŋ 6 bar teenay 2.

Alfagaa ma nee taalibey ma daarey wey timmandi.

\* sasawandiyan = kar cere ga, kar ka sawa  
 \* guuru guli : bille d'acier

Alfagaa ma nee taalibey ma daarey wey timmandi.

### Daari 1

bikey hinnaa	1	3	4	6	....	8	...
kiryoyey hinnaa	2	6	...	...	14	...	22

### Daari 2

teenawey hinnaa	2	4	5	...	30	...	...
bonboŋey hinnaa	6	12	15	18	...	27	24

### Daari 1

bikey hinnaa	1	3	4	6	7	8	11	x 2
kiryoyey hinnaa	2	6	8	12	14	16	22	

Daari jinaa ra, alfagaa ma taalibey kate i ma nee kaŋ hinna foo kul kaŋ goo zuu hinkantoo ra ga duwandi nda boro na zuu jinaa hinnaa kaŋ nga nd'a ga tenji, taabu nda 2.

Alfagaa ma nee :

2 hinnaa ti daari 1 jinaa taabakaa. Alfagaa ma kate taalibey ma nee kaŋ 3 ti daari 2 taabakaa.

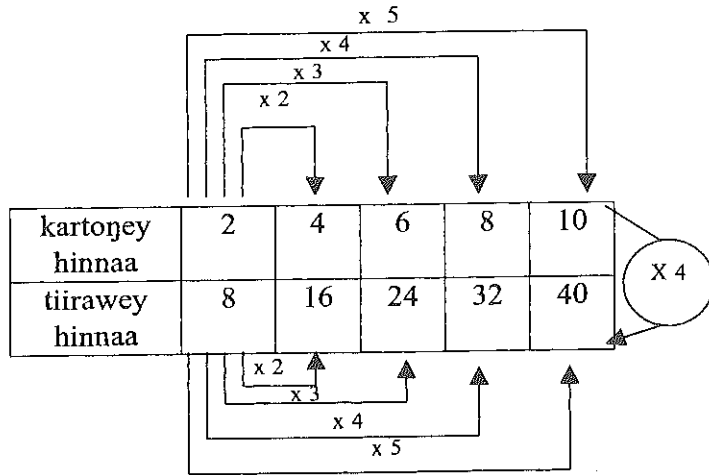
Alfagaa ma kate taalibey ma laasaabu kaŋ daari taabakaa ga duwandi nda boro na zuu hinkantoo hinnaa kaŋ n'ga baa, zemni nda zuu jinaa hinnaa kaŋ nd'a ga tenji.

Alfagaa ma nee baryan foo kul ti sasawandiyan mise ; a ma nee kaŋ daari foo kul ti sasawandiyan daari.

**Goy hinkantoo :** Alfagaa ma nee taalibey ma dendeney wey tee :

- Kaatibi 20 guuru bar kaatibi 5 guuru 4. Misoo woo dam daari ra nda kaatibi 20 guuru 2, 3, 4, 5. Sasawandiyan daari ti woo wala ? Nda sasawandiyan daari no, duu taabakaa ma takaa fahamandi kaŋ nda n' na goyoo tee.
- Alfagaa ma nee taalibey ma sasawandiyan mise suuba, i m'a dam daari ra.

Alfagaa ma zaabey dam daaroo woo ra.



Alfagaa ma taalibey laasaabandi kaŋ nda kartoney hinnaa tonton cee 2, 3, 4, 5, tiirawey hinnaa mo mma tonton cee 2, 3, 4, 5.

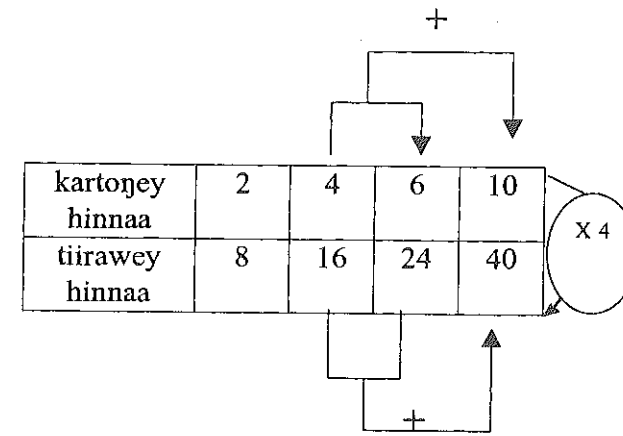
taka jinaa	taka hinkantoo
$4 \times 4 = 16$	$8 \times 2 = 16$
$6 \times 4 = 24$	$8 \times 3 = 24$
$8 \times 4 = 32$	$8 \times 4 = 32$

**Goy iyyantoo :**

Alfagaa ma nee taalibey ma dendenoo woo tee nda taka hinka. Tiira neerekaw foo na tiira kartonj 4 neere subbaahoo ra, a na 6 neere alaasaroo ra. Duu tiirawey hinnaa kaŋ a n'i neere cere ra. Alfagaa ma nee taalibey ma ngi zaabey dam daaroo woo ra.

kartoney hinnaa	2	4	6	10
tiirawey hinnaa	8	...	...	...

Alfagaa ma zaabey dam daaroo woo ra.



taka jinaa  
 $4 + 6 = 10$   
 $4 \times 10 = 40$

taka hinkantoo  
 $16 + 24 = 40$

**Denden :**

1. Daarey wey guna m'i timmandi :

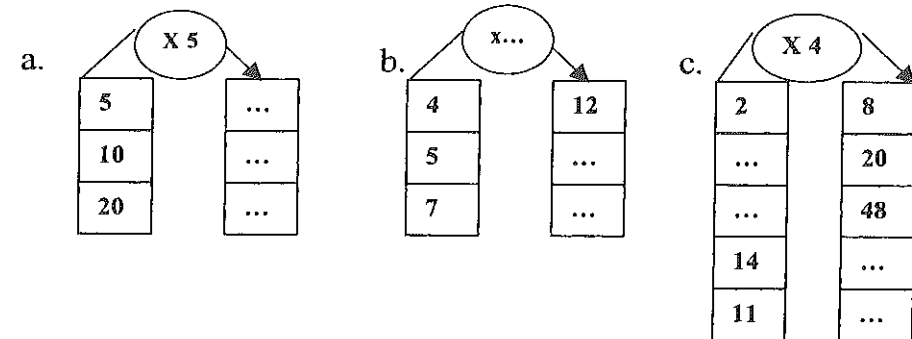
a.

0	1	2	3	4	6	7	8	9	...
...	...	...	...	...	...	...	...	...	...

b.

0	1	2	13	14	5	16	17	24	...
...	...	...	...	56	...	...	...	...	...

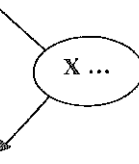
2. Wey hantum m'i timmandi :





3. Daaroo woo tee m'a timmandi :

hooraykey hinnaa	3	....	....	....
guley hinnaa	24	....	....	....



4. Daarey wey, affoo g'i ra kan ti sasawandiyan daari. Affoo no ?

8	6	4	5	7
16	12	8	10	14

9	11	2	6	3	14
27	33	6	18	9	42

Daari A

Daari B

6	8	4	3	9	2
24	34	16	12	36	8

Daari C

**Bonhaw**

1. Maamalakaw foo ga hommo kg neere k 32. Daaroo woo berandi m'a timmandi.

kilo hinnaa	1	5	7	8	9
hayoo nooru ra	32	...	...	...	...

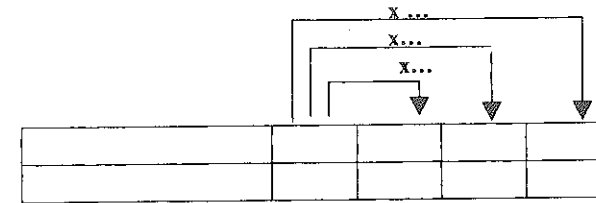
2. Isa na walha foo day k 90. Marje ti walha 2, 5, 7, 9 hayey\* ? Kabey tee ma dimmawey dam sasawandiyan daaroo ra.

3. Agoomur ga sukar kg neere k 90. Nga duuraa ceeci nd'a na kg 7, kg5, kg 6, kg 8 neere.

4. Alkuda meetar 20 no ma too arcilla foo. Meetar marje no Jamiila ga hima k'a day arcilla 2, 3, 6, 9, 7 fasaloo se ? Sasawandiyan daaroo tee m'a timmandi.

\* hayey : miyey

5. Goy nda daaroo woo ka bonhawey wey tee



- a. Taalibi foo ga goy nda tuusuji 4 jiiri ra.
  - Tuusuji marje nda talibi 3, 4, 5 ga goy ?
  - Duu nda taka hinka, tuusuji hinnaa kan nda taalibi 7 ga goy.
- b. Dooru bundu 1 hayoo ga sawa nda k1. Bundu 2, 3, 4, 20 hayoo ceeci.

## Hinna cinayan misey

**Taasiha :** Taaliboo ma hin :

- ka dadaba ka duu boñfeeray hinna cinayan misey ga ;
- ka duu dabaroo kañ ga hima boñhaw boñfeeraa ra.

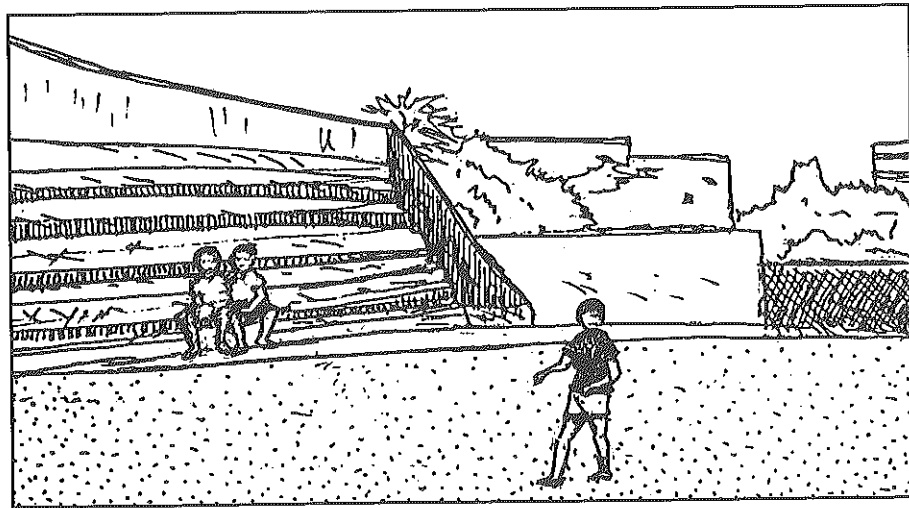
**Kabu cahante**

- 20 tonton hinna foo kul ga : 80 ; 120 ; 365 ; 638 ; 417.
- 20 kaa hinna foo kul ra : 80 ; 120 ; 365 ; 638 ; 417.
- Duu hinna foo kul taabaroo cee hinka : 30 ; 22 ; 64 ; 52 ; 100 ; 75.

**Goyjinawey :** Jinay kañ ga duuwandi koyraa ra.

**Goyey**

**Goy jinaa :**



Alfagaa ma boñhawey wey caw taalibey se.

Amar (A) nda Sori (S) ga goro cere jere Gundam balkar dogoo ra. Mise marje nda boro ga hin k'i gorandi ? Alfagaa ma nañ taalibey ma ceeci nda ngi boñ. I ma takaa fahamandi kañ nd'i n'a tee.

Minkayla (M) kaa ka goro jerey ga. Mise marje nda boro ga hin ka ngi boro 3 gorandi ?

Taalibey ma ceeci nda ngi boñ. I ma takaa fahamandi kañ nd'i n'a tee.

**Goy hinkantoo :**

Alfagaa ma taalibey cebe fondo cerecerantey kañ nd'i ga cahã ka duu boñfeeraa. I ma daari tee sanda.

Sori	Amar	Amar	Sori
------	------	------	------

**Goy hinzantoo :** Alfagaa ma nee taalibey ma boñfeerawey ceeci, i m'i bangandi ; a m'i timmandi nd'i kuma.

Sanda :

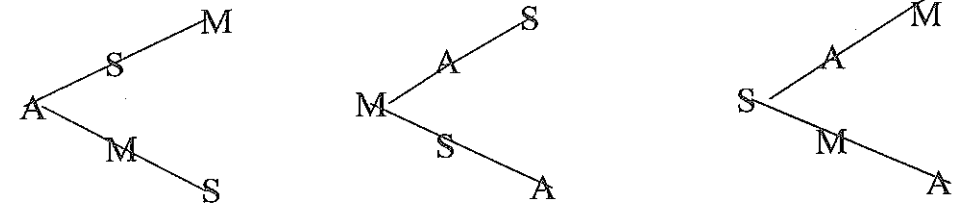
a. Amar nda Sori ga hin ka goro nda mise 2 : AS/SA

Mise 6 nda boro 3 ga hin ka goro

Sanda ASM/MAS/SMA wala SAM/MSA/AMS

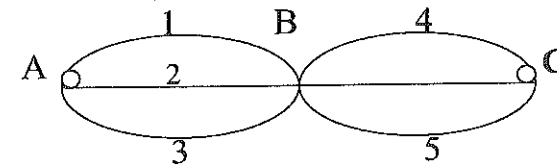
b. Boñfeeray cindey ga tee nda mise follokey hal'i ma ben.

Wala tuuroo



**Boñhaw**

1. Biyoo woo guna :



Nda n'ga hun A ka koy C do, n'ga hin ka fonda kañ lanbawey ti 1 nda 4 zaa. Amma a mana ti nga foo ti fondo. Duu fondo tanayan.

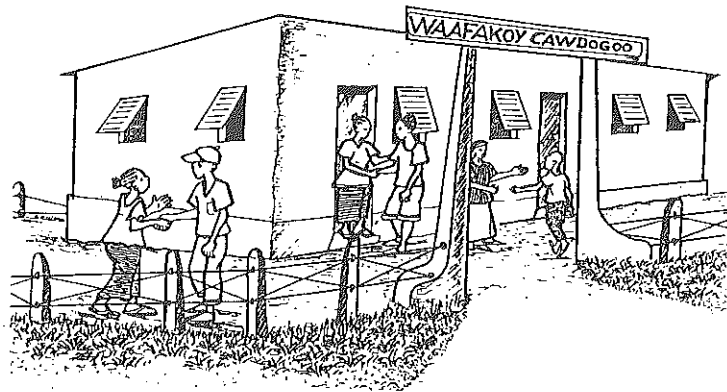
2. Hinnawey kañ ga ti kabu-ize hinka kul ceeci kañ n'ga hin k'i hantum nda 2 nda 5.

I hantum ka hun i kul ikaccaa ga ka koy i kul ibeeroo ga.

Hinnawey kaŋ ga ti kabu-ize hinza kul ceeci kaŋ n'ga hin k'i hantum nda 2, 5 wala 7.

I hantum ka hun i kul ibeeroo ga ka zunbu i kul ikaccaa ga.

3. Ali goo nda kalam noonay hinka : icirayyaŋ nd'ibibiyaŋ. A na ihinka noo nga ceroo se. Noonay foo no kalam hinkaa kaŋ a n'i noo ceroo se ga hin ka ti a ?
4. Koyrataawoo kermesoo hane, lokkol na biyyeyaŋ neere kaŋ lanbawey ga sintin nda 10 ka koy 100 ga. Tikewey kaŋ lanbawey ga timme nda 8 ga duu walha foo. Wey kaŋ ga sintin nda 4 ga duu kitaabu foo.
  - Walha marje no ma hin ka noondi ?
  - Kitaabu marje no ma hin ka noondi ?
  - Tike foo goo i ra kaŋ ga duu walha nda kitaabu. Tike foo no
5. Umar goo nda subu yeyno hinka (iciray foo nd'ibula foo) nda forkiya hinza (ikaaray foo, ifirzi foo nda ikara foo). Taka dumi marje nd'a ga hin ka bankaaray ?
6.
  - a. Batumaa ra, hondiyaw 3 kaŋ goo cere bande nd'arwasu 3 na cere kubay lokkol. Woyey na arey noo kabe k'i foo. Cee marje no i ga hin ka cere noo kabe ?



- b. Batumaa ra, hondiyaw 3 nd'arwasu 3 na cere kubay. I na cere noo kabe. Cee marje n'i ga hin ka cere noo kabe ?

# Biibayray

## Zeeri siirante, sukante, kanante, teeyan zuu gaaru-gaarante ga

**Taasiha :** Taaliboo ma hin :

- ka zeeri dumey wey bay zeeri siirante, isukante, ikanante ;
- ka zeeri siirante, isukante, ikanante tee zuu gaaru-gaarante ga.

### Kabu cahante

Wa hinnawey affoo kul sasawandi iwoyboŋ manantaa ga. Sanda 38 sasawandoo iwoyboŋ manantaa ga ti 40 wala mo 31 sasawandoo iwoyboŋ manantaa ga ti 30.  
48, 63, 27, 61, 94.

### Goyjinawey :

Kaddasu kaŋ ga tee zuu gaaru-gaarante, zeeribundu, zuu gaaru-gaarante walhabeeroo ga, kiryoŋ wala bik, dooru noonante, walha kaŋ goo nda zuu gaaru-gaarante.

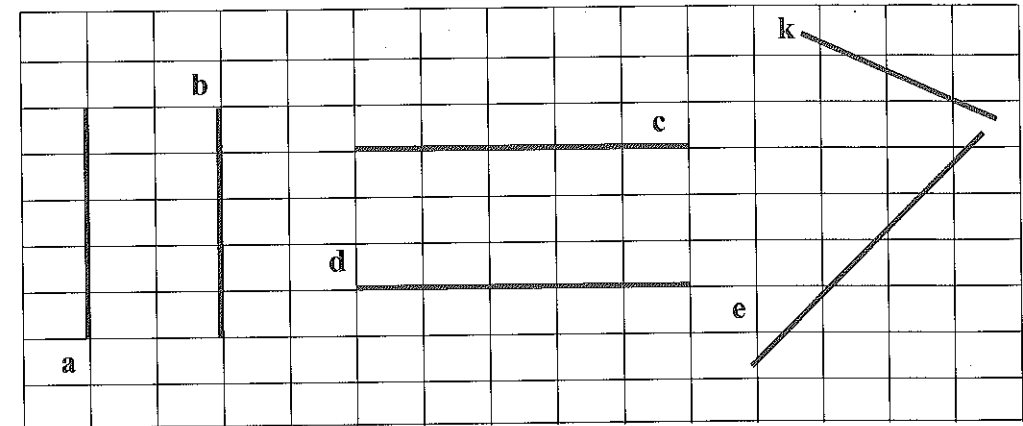
### Goyey

**Goy jinaa :** Alfagaa ma nee taalibi foo kul ma zeeri foo tee nga kaddasu zuu gaaru-gaarantaa ga nda zeeribundu. Alfagaa ma taalibey goyoo laasaabu, ka dii zeeri siyey kaŋ i n'i tee.

**Goy hinkantoo :** Alfagaa ma zuu gaaru-gaarante foo tee walhabeeroo ga. Alfagaa ma nee taalibey ma zeerey siyey kaŋ i duu ey, dam zuu gaaru-gaarantaa ra.

Laasaabu banda ga, nd'alfagaa maata kaŋ zeeri serrante sii foo wal'ihinka mana duwandi taalibey zaabey ra, a m'i tee i se.

Zaabey ma ti wey :



**a** nda **b** ti zeeri serrante sukanteyan ; **c** nda **d** ti zeeri serrante kananteyan ; **k** nda **e** ti zeeri serrante siiranteyan.

### Goy hinkantoo :

Alfagaa nda taalibey ma duu zeerey maawey :

Wa jinayan har kaŋ biyey goo nda zeeri sukanteyan, zeeri kananteyan nda zeeri siiranteyan.

### Goy taacantoo :

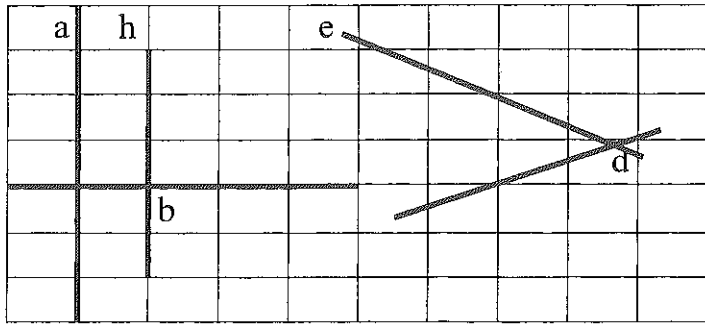
Alfagaa ma nee taalibey ma zeeri sii hinzaa kul tee nga walhawey wala nga kaddasu zuu gaaru-gaarantey ga, i ma maapey hantum i cire.

### Denden :

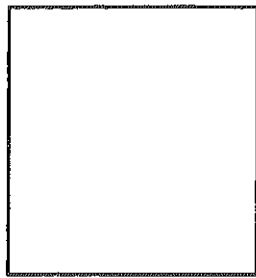
1. Zuu gaaru-gaarante foo ne kaŋ ra zeeriyen goo.

Zeerey har kaŋ ti

- isukante
- ikanante
- isiirante.



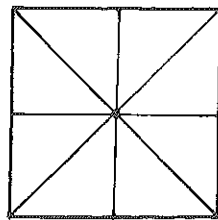
2. Zeeri kanante hinka, zeeri siirante hinka nda zeeri zukante hinka tee ni kaddasu zuu gaaru-gaarantaa ga.
3. Tonbi foo tee ni kaddasu zuu gaaru-gaarantaa ga, ma zeeri sii hinzaa tee ka hun tonboo ga.
4. Ganbu foo kaadaroo\* ne



X dam bundu sukantey ga.  
0 dam bundu kanantey ga.

5. Biyoo woo guna, ma daaroo timmandi nda kabu-izey kañ ga hima.

zeeri serrante sukante	.....
zeeri serrante kanante	.....
zeeri serrnte siirante	.....



\* kaadar : sakuji = cadre, encadrement

## Kaare, muulubii, kanjehinza : teeyanoo nda cinaroo zuu gaaru-gaarante ga

**Taasiha :** Taaliboo ma hin :

- ka kaare nda muulubii nda kanjehinza bay ;
- ka kaare nda muulubii nda kanjehinza tee zuu gaaru-gaarante ga.

**Kabu cahante :**

- hinnawey hantum ka hun 1 004 ka koy 1 024 ga
- kabu nd'ihinka-hinka ka hun 8 806 ka koy 8 984 ga.

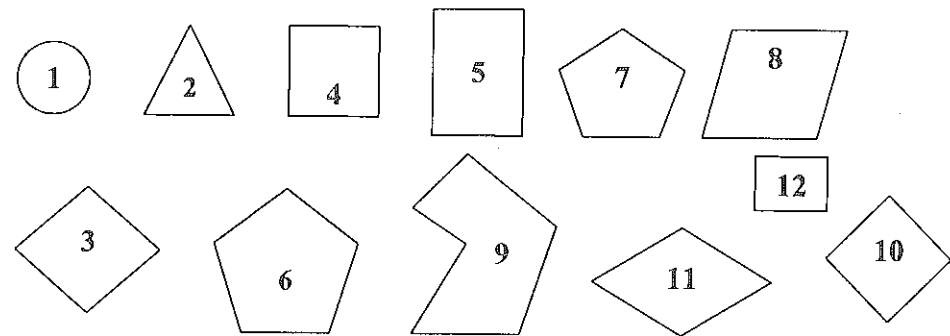
**Goyjinawey :**

Bii sii boobo kañ dunbandi zuu gaaru-gaarante kaddasu sendo ra (kaareyañ, muulubiiyañ, kanjehinzayañ, ndarkabonnyañ, sunbiiyañ, gungiliyañ, muulu nda bii tanayañ).

**Goyey**

**1. Kaare :**

**Goy jinaa :** Alfagaa ma nee taalibey ma dendenoo woo tee.



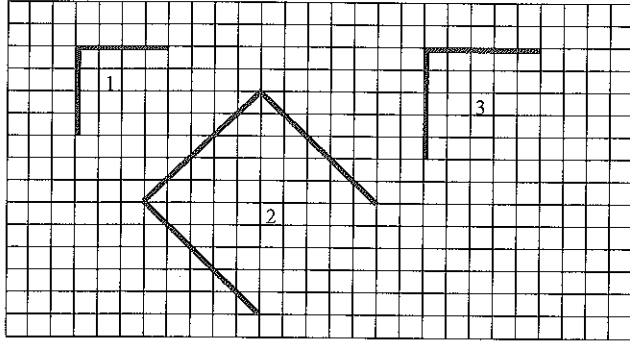
Biyey wey guna. Kabu-izey kañ goo kaarewey ra hantum.

**Goy hinkantoo :** Alfagaa ma nee taalibey ma jinayyañ maajney har kañ ga hima nda kaare.

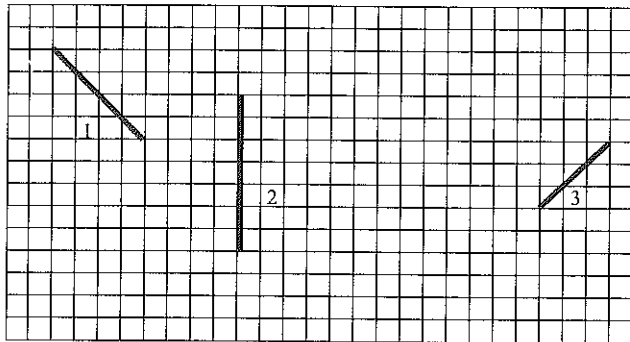
**Goy hinzantoo :** Alfagaa ma nee taalibi foo kul ma kaare tee zuu gaaru-gaarante ga.

**Denden :**

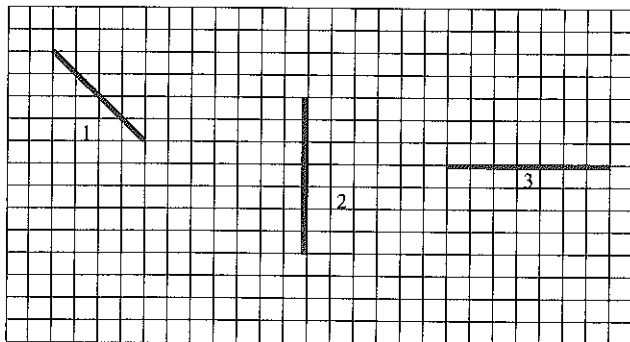
1. Bii foo kul berandi, m'a timmandi zuu gaaru-gaarante ga ka duu kaare.



2. Zeeri foo kul berandi m'a timmandi zuu-gaaru-gaarante ga ka duu kaare.



3. Zeeri foo kul berandi, m'a timmandi zuu gaaru-gaarante ga ka duu kaare hinka.



4. Tonbi foo tee zuu gaaru-gaarante ga. Kaare hinka tee kaṅ ga hun tonboo ga. N'ga hin ka kaare tanayanṅ tee wala ?
5. Tonbi hinka kaṅ ga fay, tee zuu gaaru-gaarante ga. N'ga hin ka kaare tee kaṅ ga hun i ga wala ? A tee nda n'ga hin. N'ga hin ka kaare tanayanṅ tee kaṅ ga hun tonbey ga wala ? I tee nda n'ga hin.

**2. Muulubii :**

**Goy taacantoo :** Alfagaa ma nee taalibey ma goy jinaa fondaa gana ka muulubii bay.

**Goy guwantoo :** Alfagaa nda taalibey ma goy hinkantoo gana ka muulubii bay.

**Goy idduwantoo :** Alfagaa nda taalibey ma goy hinzantoo gana ka muulubii tee.

**Denden :** Ka dendeney 1 ka koy 5 ga gana muulubii bayyanoo ra.

**3. Kanjehinza :** Kanjehinza bayyanoo ra, alfagaa ma goy follokaa filla kaṅ a n'a tee kaare cawandoo fondaa ra : goyey nda dendeney kul kala denden 5ntoo.

**Denden :** Tonbi hinka kaṅ ga fay tee zuu gaaru-gaarante ga. N'ga hin ka kanjehinza 3 kaṅ mana ti affoo tee ka hun tonbey ga wala ? I tee nda n'ga hin.

## Kanje bayray dunbo : kanje dumey (gorante, tersante, sotto)

**Taasiha :** Taaliboo ma hin :

- ka kanje bay ;
- ka duu kanje ga bayray dunbo ;
- ka kanje dumey cin.

**Kabu cahante :**

710 x 10 ; 77 x 100 ; 125 x 20  
325 x 10 ; 95 x 30 ; 352 x 40.

**Goyjinawey :** Zeeribundu, kanje-gorante zeeriji, kaddasu

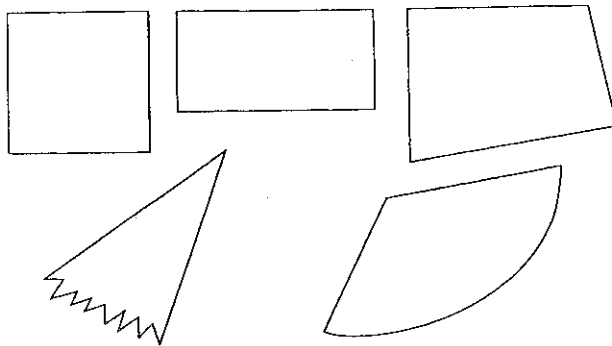
**Goyey**

**Goy jinaa :**

Alfagaa ma kitaabu wala kaddasu fita kaŋ ga ti kaare wala muulubii cebe taalibey se.

Alfagaa ma nee taalibey ma loosey cebe.

**Goy hinkantoo :**



Biyey wey ma dunbandi kaddasu senda wala ibaana ra, i ma cebandi taalibey se.

Alfagaa ma loosey bayrandi taalibey se, i m'i noona.

Alfagaa ma loosu foo cebe a ma nee : « **Woo ti kanje.** »

Alfagaa ma nee taalibey ma kanje tana fooyan cebe. I ma laasaabu kaŋ kartonoo caraw hinkaa gamoo ti kanje.

Alfagaa ma kanje tee walhabeeroo ga. A ma kanjoo carawey nda boŋoo cebe, a ma maayey har.

**Goy hinzantoo :**

Alfagaa ma nee taalibey ma kanjeyan tee ngi walhawey wala ngi kayyewey ga.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma kanje himakasinayyan har.

**Goy guwantoo :**

Alfagaa ma kanje-gorante zeerijoo cebe, a ma wiri taalibey ma kanjey cebe. Alfagaa ga kanje gorantaa cebe, a ma maayoo har.

Alfagaa ma nee taalibey ma kanje gorante cin.

Alfagaa ma kanje gorante cin walhabeeroo ga.

**Goy idduwantoo :**

Alfagaa ma kanje tersante cin walhabeeroo ga. A m'a deedandi nda kanje-gorante zeerijoo kanje gorantaa.

A ma nee taalibey se kaŋ kanje tersante bisa kanje gorante. A ma maayoo har i se. Maayoo ti **kanje tersante.**

**Goy iyyantoo :**

Alfagaa ma goyoo woo da cine tee nda kanje sotto.

Alfagaa ma taalibey bayrandi kaŋ kanje sotto ga kaccu nda kanje gorante.

A ma nee i se : woo ti **kanje sotto.**

**Goy yaahantoo :**

Alfagaa ma nee taalibey ma kanje sotto nda kanje tersante biyey ma dunbu karton ra.

A ma nee taalibey m'i deedandi.

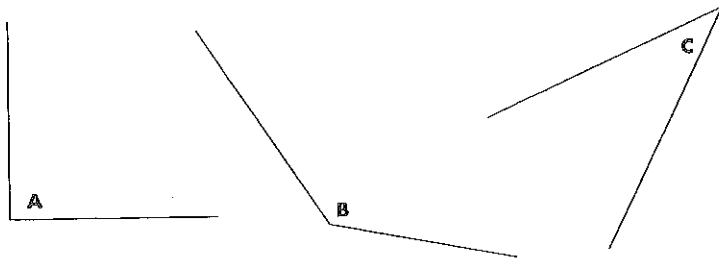
A ma taalibey haa : Macin ti war laasaaboo ?

Alfagaa ma nee taalibey ma kanje gorante hinka dunbu karton ra, i m'i deedandi.

Alfagaa ma taalibey haa nda haya kaŋ i n'a laasaabu.

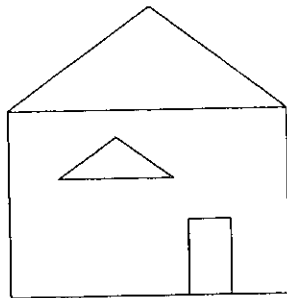
**Denden**

1. Kanje wey affoo kul berandi, ma maayoo hantum a cire.



2. Hugoo biyoo berandi, ma laasaabu.

a. Kanje gorante marje bara a se ? Tonbi ciray dam i ga



b. Kanje tersante marje bara a se ? I silbay nda iboogu (bula)

c. Kanje sotto marje bara a se ? I silbay nda noonay karay.

3. Bii tee :

a. kañ goo nda kanje gorante 2 ;

b. kañ goo nda kanje sotto 2 ;

c. kañ goo nda kanje gorante 2 nda kanje tersante 3.

4. Kanje foo kul harfoo dam nga dogoo kañ ga hima, daaroo ra.

Kanje		
Sotto	Gorante	tersante

**27**

**Zeeri gorante, zeeri ceesante cinayanoo zuu gaaru-gaarante ga, cinayanoo nda zeeribundu nda kanje-gorante zeeriji**

**Taasiha :** Taaliboo ma hin :

- ka zeeri hinka gorandi cere ga zuugaaru-gaarante ra ;
- ka zeeri ceesantayan tee nda kanje-gorante zeeriji, zuu gaaru-gaarante ra.

**Kabu cahante :**

225 x 10 ; 45 x 100 ; 250 x 30

196 x 20 ; 206 x 50

Hinnawey wey affoo kul timmandi nda 10

0 ; 1 ; 2 ; 3 ; 4 ; 5 ; 6 ; 7 ; 8 ; 9 ; 10

Hinnawey wey affoo kul timmandi nda 100

83 ; 17 ; 58 ; 72 ; 29 ; 52

Hinnawey wey affoo kul timmandi 1000

173 ; 209 ; 375 ; 644 ; 917 ; 514

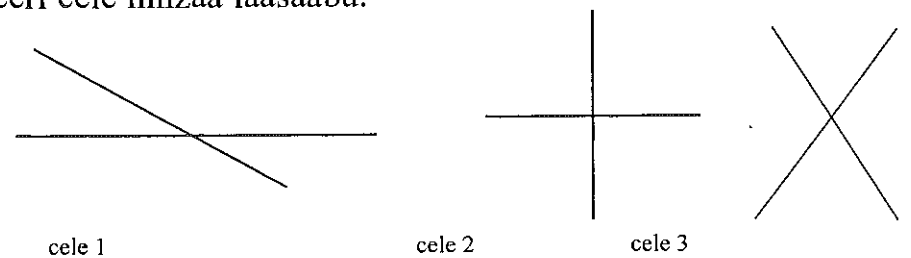
**Goyjinawey :**

Zeeribundu, kanje-gorante zeeriji, kaddasu zuu gaaru-gaarante.

**Goyey**

**Goy jinaa :**

Alfagaa ma zuu gaaru-gaarante hinza tee. Zuu gaaru-gaarante foo kul ra, a ma zeeri serrante hinka tee kañ ga gaaru cere ga. Taalibey ma zeeri cele hinzaa laasaabu.





Alfagaa ma nee taalibey ma cele cebe kan zeerey ga cere dunbu ka ti kanje gorante.

Cele hinkantoo zeerey ga tee kanje gorante.

Alfagaa ma nee zeeriyar kan ga cere dunbu ka ti kanje gorante ti zeeri goranteyar.

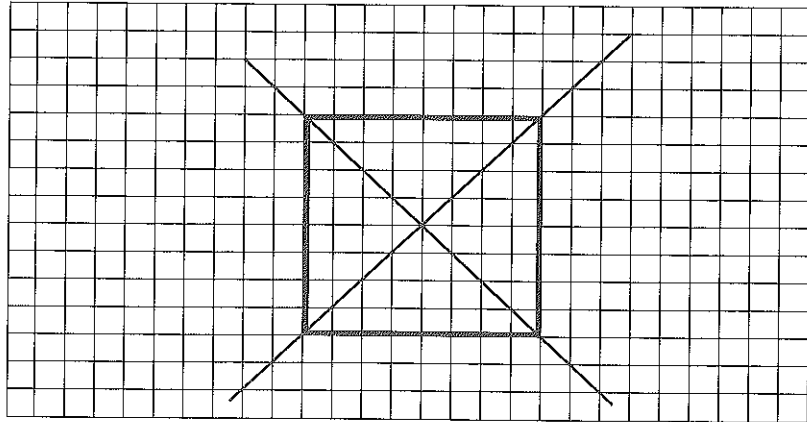
Alfagaa ma taalibey haa : itanayar goo cele hinzaa woo ra koyne wala ?

Alfagaa ma nee taalibey ma kanje gorante himakasineyar har.

### Goy hinkantoo :

- Alfagaa ma nee taalibey ma zeeri gorantayar tee zuu gaaru-gaarante ga.

- Alfagaa ma nee taalibey ma biyoo woo tee zuu gaaru-gaarante ga.



- Alfagaa ma nee taalibey ma zeeri gorante hinka kan ga siiri, tee zuu gaaru-gaarante ra.

**Goy hinzantoo :** Alfagaa ma nee taalibey ma zeeri goranteyar tee kaddasu kaaray ga nda zeeribundu nda kanje-gorante zeeriji.

### Goy taacantoo :

Alfagaa ma nee taalibey ma zeeri gorante hinka tee zeeri tana ga, zuu gaaru-gaarante ra.

Alfagaa ma nee taalibey ma zeerey gamey neesi nda kanje-gorante zeerijoo.

Laasaabu ra gamey kul ga sawa.

Alfagaa ma nee zeeri serrante hinka kan gamey ga sawa kul zeeri ceesantayar no.

### Goy guwantoo :

- Alfagaa ma nee taalibey ma : zeeri ceesante hinka tee zuu gaaru-gaarante ga.

- Zeeri ceesante hinka kan ga siiri, tee zuu gaaru-gaarante ga.

### Goy idduwantoo :

Alfagaa ma nee taalibey ma zeeri ceesante hinka tee kaddasu kaaray ga nda zeeribundu nda kanje-gorante zeeriji.

### Denden

1. Zeeri serrante foo tee ma maayoo dam  $d$ . Ma tonbi foo dam zeeroo ga, ka maayoo dam  $N$ .  $N$  ga, zeeri serrante tee kan ga goro  $d$  ga.
2. Zeeri serrante tee ma maayoo dam  $k$ . Zeeri gorante hinka  $i$  nda  $t$  tee, kan ga goro  $k$  ga.  
Macin no  $n$ 'ga hin  $k$ 'a har  $i$  nda  $t$  ga ?
3. Zeeri dunbo sukante  $AB$  tee kan kuuyanoo ti  $cm$  6. Ka hun  $A$  ka koy ni kanbe gumaa here ma zeeri serrante gorante kan ti  $AC$  tee kan kuuyanoo ti  $cm$  3. Zeeri gorante foo  $BD$  tee nda taka follokaa ka hun  $B$  ka koy  $D$  nda ni kanbe gumaa here kan kuuyanoo ti  $cm$  3  
 $C$  nda  $D$  dobu cere ga.  
Macin no ni ga hin  $k$ 'a har  $AB$  zeeroo nda  $CD$  zeeroo ga ?  
Macin no ni ga hin  $k$ 'a har  $AC$  nda  $BD$  zeerey ga ?  
 $A$  nda  $D$  dobu cere ga ;  $B$  nda  $C$  mo dobu cere ga.  
 $AD$  nda  $BC$  ga goro cere ga wala ?
4. Zeeri serrante  $OP$  tee nda ni zeeribundoo (masi hanga ni kayyaa zeerey bande). Zeeri serrante ceesante hinza gorandi  $OP$  ga.

**Kaare, muulubii: cinayanoo nda taabayanoo nda zeeribundu wala kanje-gorante zeeriji ; gamekuna zeeri**

**Taasiha :** Taaliboo ma hin :

- ka kaare nda muulubii cin nda taabayan zuu gaaru-gaarante ga ;
- ka kaare nda muulubii cin nda zeeribundu wala kanje-gorante zeeriji zuu gaaru-gaarante ra ;
- ka kaare nda muulubii gamekuna zeerey bay, k'i zeeri.

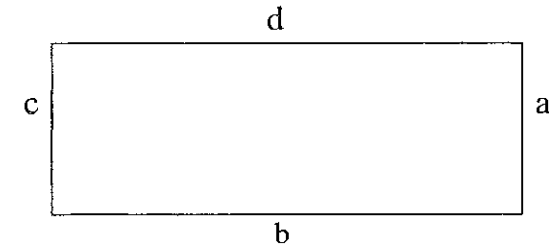
**Kabu cahante**

1. Ncirni beeroo hane, zanka 12 nda woy 16 nda aru 7 ka safar Baanikan lotokor-hugoo ra. Marje ti borey hinnaa kanj safar ?
2. Kabu nda 20 - 20 ka hun 110 ka koy 190.
3. - 9 tonton hinnawey wey affoo kul ga.  
91 ; 104 ; 147 ; 749
4. - 19 tonton hinnawey wey affoo kul ga.  
87 ; 149 ; 947 ; 899
5. - 29 tonton hinnawey wey affoo kul ga.  
417 ; 848 ; 624 ; 5249
6. - 99 tonton hinnawey wey affoo kul ga.  
498 ; 841 ; 1742 ; 4762

**Goyjinawey :** Zeeribundu, kanje-gorante zeeriji, zuu gaaru-gaarante kaddasu.

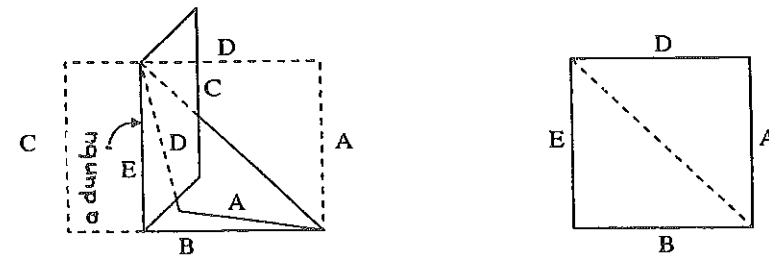
**Goy jinaa :**

Alfagaa ma taalibi foo kul noo kaddasu kaaray muulubii himakasinay. A ma nee i ma carawey maayey dam abcd, sanda



Alfagaa ma nee taalibey ma a caraa taabu b wala d caraa ga.

- i ma c caraa taabu taabari jinaa boŋ, d caraa kanj taaba bande.
- i ma c caraa taabaroo feeri, i m'a dunbu taabaroo zeeroo bande ;
- taalibey ma kaddasoo cindoo feeri.



Alfagaa ma nee taalibey ma biyoo kanj i duu a, carawey deedandi : i ga sawa.

A ma yee ka nee i ma kanjey laasaabu nda kanje-gorante zeeriji : kanje goranteyan no.

Alfagaa ma taalibey haa nda biyoo kanj i duu a, maayoo.

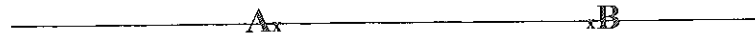
**Goy hinkantoo :**

Alfagaa ma nee taalibey ma zeeri dunbo serrante foo tee ngi walhawey ga ; i ma maayoo dam d.

Taalibey ma tonbi A tee zeeroo boŋ.

Alfagaa nda taalibey ma waafaku kaarewoo caraa kuuyanoo ga, i ma tonbi B dam.

AB ti kaarewoo caraa.  
 Alfagaa ma nee taalibi foo kul ma nga kaarewoo timmandi nda kanje-gorante zeeriji nda zeeribundu.



**Goy hinzantoo :**

Alfagaa ma nee taalibey ma kaare kanj caraa kuuyanoo ga ti cm 6, tee ngi kayyewey ga nda kanje-gorante zeeriji nda zeeribundu.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma kaare tana cin ngi kayyewey ga kanj caraa kuuyanoo ti cm 8 nda kanje-gorante zeeriji nda zeeribundu.

**Goy guwantoo :**

Alfagaa ma nee taalibi foo kul ma nga kaarewoo maayoo dam ABCD ; a ma taaba dogoo maayoo har.

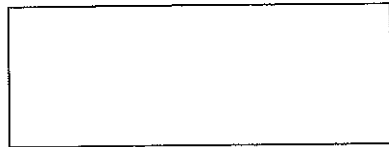
Taaba dogoo woo se i ga nee kaare gamekuna zeeri.

Alfagaa ma taalibey haa : gamekuna zeeri tana goo kaarewoo ra wala ?

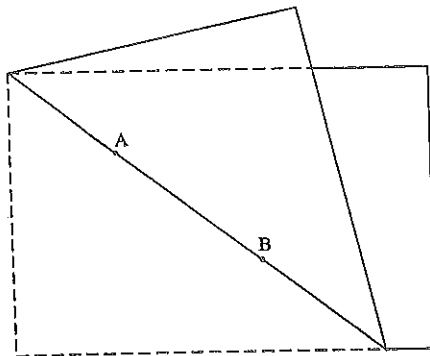
Nda itanayanj goo no, w'i tee.

**Goy idduwantoo :**

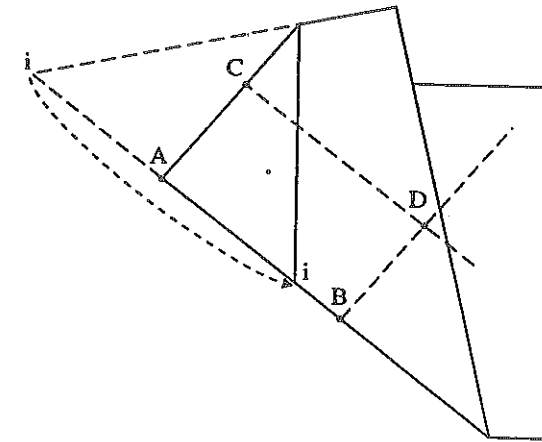
Alfagaa ma nee taalibi foo ma kaddasu fita foo sanbu.



Taalibey ma kaddasey taabu taabari hinka kanj si sawa.  
 I ma tonbi A nda B kanj ga hibi (fay) cere ga, dam taabaroo zeeroo boŋ.



Taalibey ma yee ka kaddasey taabu tonbi A ga, taka kanj ra taabari jinaa jere faa ma kani ka boori jere hinkantoo ga : ir ga duu kanje gorante A ga.



Taalibey ma tonbi C dam taabari koraa woo ga.

Taalibey ma yee koyne ka kaddasey taabu tonbi C ga taka kanj ra i ma duu kanje gorante C ga.

Sohõ i ma kaddasey taabu tonbi B ga sanda A takaa.

I ma D dam C nda B taabarey kubay dogoo ga.

Taalibey ma kaddasey feeri.

Alfagaa ma nee taalibey ma biyoo kanj i duu a, cerawey deedandi : i ga sawa ihinka-hinka.

A ma nee taalibey ma kanjey laasaabu nda kanje-gorante zeeriji : kanje goranteyanj no. Alfagaa m'i haa nda ABCD maayoo.

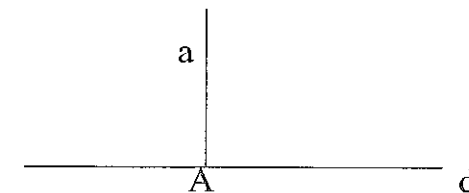
Alfagaa ma nee taalibey ma ngi biyoo dunbu-dunbu, i ma duu gamekuna zeerey.

**Goy iyyantoo :**

Alfagaa ma nee taalibey ma zeeri serrante d tee.

I ma tonbi A dam zeeroo boŋ.

I ma zeeri gorante a tee kanj ga bisa nda A, sanda :



I ma jin ka waafaku muulubiyoo kuuyanoo ga, i ma tonbi B dam d zeeroo ga ; i ma yee ka waafaku muulubiyoo hayyanoo ga, i ma tonbi C dam a zeeroo ga.

Taalibey ma biyoo timmandi nda kanje-gorante zeeriji nda zeeribundu ka duu muulubii.

**Goy yaahantoo :**

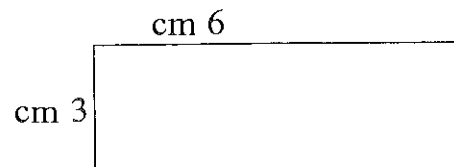
Alfagaa ma nee taalibey ma muulubii cin kañ ceraw faa ti cm 7 affaa ti cm 5, ngi kaddasey ga.

**Goy yaggantoo :**

Alfagaa ma nee taalibey ma muulubii kañ ceraw faa ti cm 6 nga ceraw faa ti cm 4, tee ngi kaddasey ga ; i ma nga gamekuna zeerey tee.

**Denden**

1. Zeeri dunbo sukante kañ kuuyanoo ti cm 3 tee ni kayyewoo ga. A timmandi muulubii kañ kuuyanoo ti cm 6 nda zeeribundu nda kanje-gorante zeeriji.
2. Muulubiyoo gamekuna zeerey kañ ga bisa nda carawey tee. Muulubii marje no n'ga dii ey biyoo ra sohõ ?
3. Muulubii tee ma maayoo dam ABCD nda zeeribundu nda kanje-gorante zeeriji. B nda D dobandi nda zeeri serrante. Bii dumey kañ ni duu ey maayey har. I ga hima cere wala ? BD ti game kuna zeeri wala ?
4. Kaare tee i kayyewoo ra, ma nga gamekuna zeerey tee kañ ga carawey dunbu.
5. Kaare tee ni kayyewoo ra ; maayoo dam ABCD. Gamekuna zeerey tee kañ ga bisa nda A nda C ; B nda D.
6. Kaare tee ni kayyewoo ra, ma nga gamekuna zeerey kul tee.
7. Biyoo berandi, m'a timmandi ka duu muulubii.



Gamekuna zeeroo tee kañ ga bisa nda cerea kañ goo nda cm 6.

8. Kaare tee ma maayoo dam ABCD. Gamekuna zeeroo tee kañ ga bisa nda AB nda CD zeeri dunbey. Bii taaga hinkaa kañ n'duu ey, maayey har.

**Kaare, muulubii, kanjehinza :  
cerawey, kanjey, boñey.**

**Taasiha :** Taaliboo ma hin :

- ka kaare nda muulubii carawey hinnaa nda ngi alhaaley bay ;
- ka kaare nda muulubii kanjey hinnaa nda ngi alhaaley bay ;
- ka kaare nda muulubii boñey hinnaa bay ;
- ka kanjehinza carawey, nda kanjey nda boñey hinnaa bay.

**Kabu cahante :**

Kabu nd'igguu-guu ka hun 850 ka koy 800 ; kabu ka hun 800 ka ziji 850.

**Goyjinawey :** Zeeribundu, kanje-gorante zeeriji, kaare nda muulubii kañ dunbandi kaddasu senda ra.

**Goyey**

**Goy jinaa :**

Alfagaa ma nee taalibey ma kaare ABCD dunbu kaddasu ra. Alfagaa ma nee kañ AB, BC, CD, DA zeeri dunbey ti **kaarewoo carawey**.

Alfagaa ma nee i ma carawey hinnaa har. I ma carawey deedandi ka ngi alhaaley har (I ga sawa, i ga ceesi ihinka-hinka).

Aflagaa ma nee kañ A, B, C, D tonbey ti **kaarewoo boñey**.

Taalibey ma nee kañ boñ taaci bara kaare se.

Alfagaa ma nee kanje gorante taaci bara kaare se.

**Goy hinkantoo :**

Taalibi foo kul ma kaare tee nga walhaa ga.

Taalibi foo kul ma nga kaarewoo laasaabu, a ma kanjey hinnaa har.

A m'i neesi nda kanje-gorante zeerijoo ka ngi alhaaley har.  
Taalibi foo kul ma nga kaarewoo laasaabu a ma boŋey hinnaa har.

**Goy hinzantoo :**

Alfagaa ma nee taalibey ma goy follokey tee nda muulubii nda kanjehinza.

**Laasaabu :**

**Muulubii :**

Muulubii caraway ga sawa ihinka-hinka ;

- i ga ceesi cere se ihinka-hinka ;
- kanje taacaa kul ga goro sanda kaare waney ;
- boŋ taaci bar'a se sanda kaare

**Kanjehinza :**

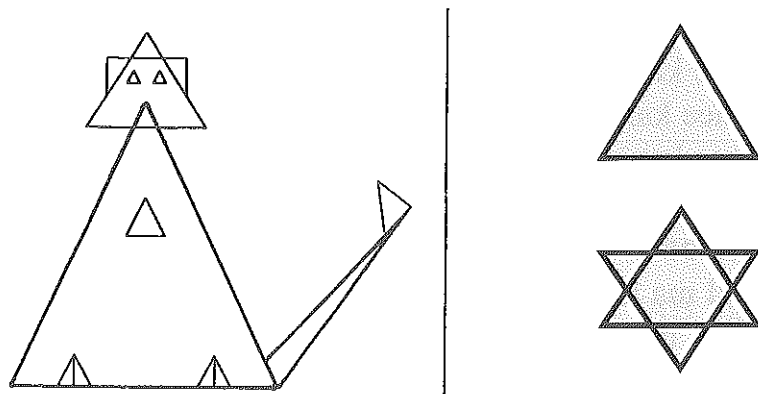
- caraw hinza bara kanjehinza se ;
- kanje hinza goo a se ;
- boŋ hinza bara a se.

**Goy taacantoo :**

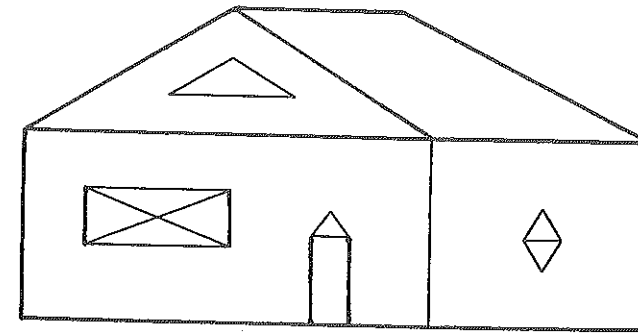
Alfagaa ma nee taalibey ma kanjehinza kaŋ caraw hinkaa ga sawa. I ma kanjehinza tee kaŋ goo nda kanje sotto hinza. I ma kanjehinza tee kaŋ go nda kanje gorante. I ma kanjehinza tee kaŋ goo nda kanje tersante.

**Denden :**

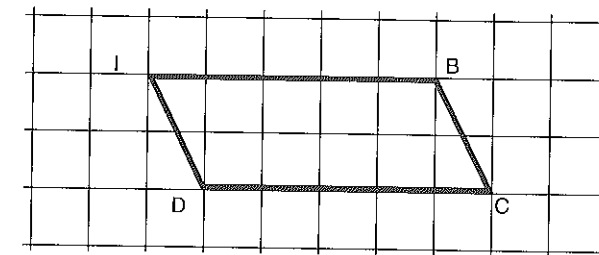
1. Biyoo woo guna ma kanjehinzey hinnaa har kaŋ goo a ra.



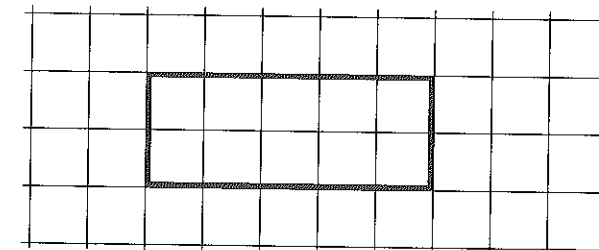
2. Kanjehinza tee ni kayyewoo ga kaŋ kanje hinzaa kul ga sotto.
3. Kanjehinza marje no n'ga hin k'i kabu hugoo woo ra ?



4. Biyoo woo laasaabu : a goo nda caraw taaci sanda kaare, macin ra nga nda kaare ga marga koyne ?

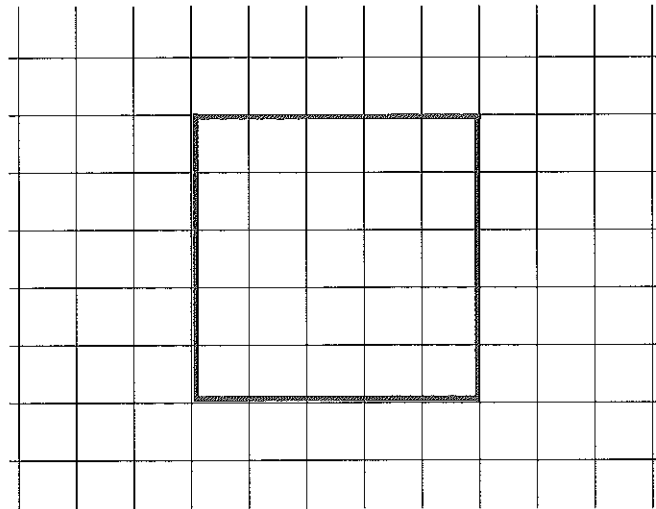


5. Biyoo woo laasaabu ma nga alhaali hinka har kaŋ ga bara kaare se.



6. Kaarewoo guna ma :

- nga carawey hinnaa hantum ;
- nga kanje gorantey hinnaa hantum ;
- nga boŋey hinnaa hantum ;
- nga gamekuna zeerey hinnaa hantum.



7. Kanjehinza bii tee kaŋ goo nda kanje tersante foo.

8. Kanjehinza kaŋ goo nda kanje gorante biyoo tee.

## Tenjandiyan zeeri serrante ga zuu gaaru-gaarante ra

**Taasiha :** Taaliboo ma hin :

- ka bii kaŋ sintin, timmandi tenjandiyan zeeri ga zuu gaaru- gaarante ga ;
- ka bii foo cele tee zeeri serrante ga, zuu gaaru-gaarante ra.

**Kabu cahante :** Duu hinnawey dimmaa :

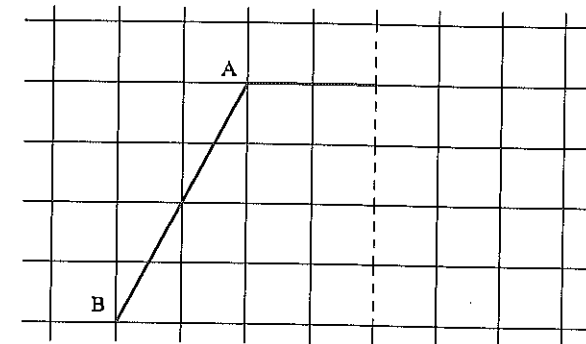
$$425 + 19 ; \quad 850 + 49 ; \quad 210 + 29$$

Boro ga hinnaa kaŋ ga hima (20 wala 30 wala 40,....50) tonton hinna jinaa ga, ma affoo kaa dimmaa ra.

**Goyjinawey :** Kaddasuyaŋ, zeeribundu

**Goyey**

**Goy jinaa :**

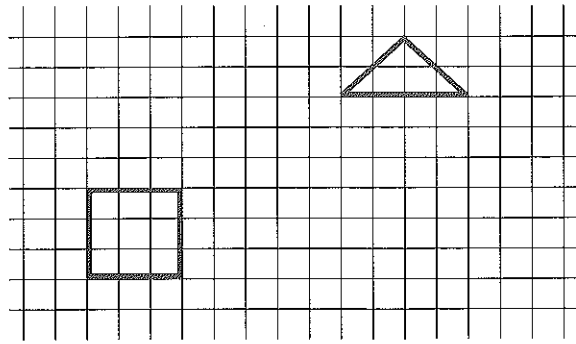


Alfagaa ma biyoo woo tee walhabeeroo ga. A ma taalibey laasaabandi kaŋ a mana timme. Hala a ma hin ka timme i ga hima ka biyoo celaa tee zeeri serrantaa ga.

Woo sabbu se a ma nee taalibey ma tonbi A nda tonbi B celey ceeci zuu gaaru-gaarantaa ra. Faham banda ga taalibey ma biyoo timmandi.

Taalibi foo kul ma goyoo tee nga kaddasoo boŋ kaŋ alfagaa n'a noo a se.

**Goy hinkantoo :**

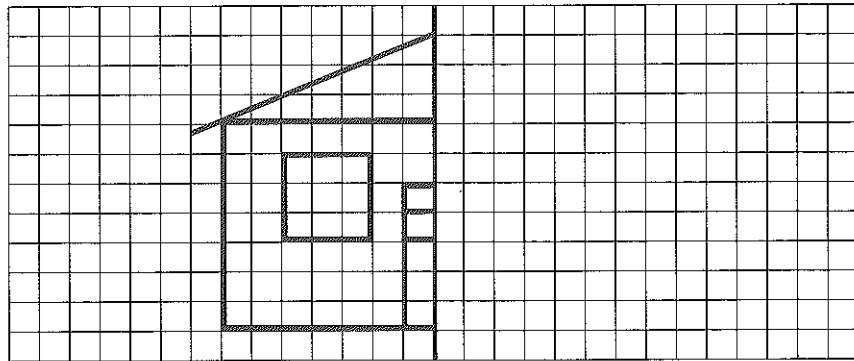


Alfagaa ma biyey kaddasey zamna taalibey se. A ma nee taalibey ma bii foo kul celaa tee zeeri serrantaa ga.

Taalibey ma ngi goyey cebe cere se nda affoo-foo ka guna wala i boori.

Alfagaa m'i faaba ka wey kaŋ mana boori, serrandi.

**Goy hinzantoo :**

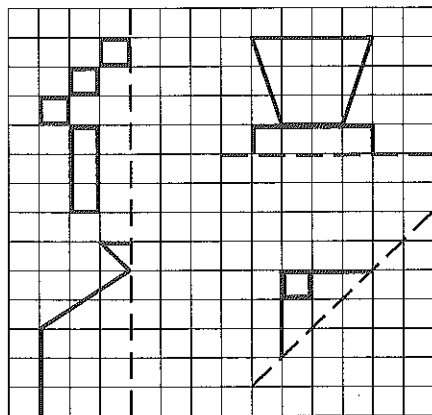


Alfagaa ma biyoo woo kaddasey zamna taalibey se.

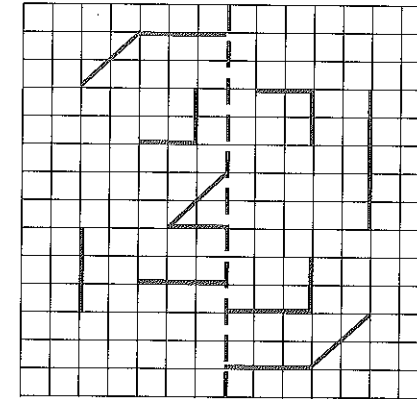
A ma nee i m'a timmandi taka kaŋ ra i ma duu bii hinka kaŋ kul ga sawa tak.

**Denden**

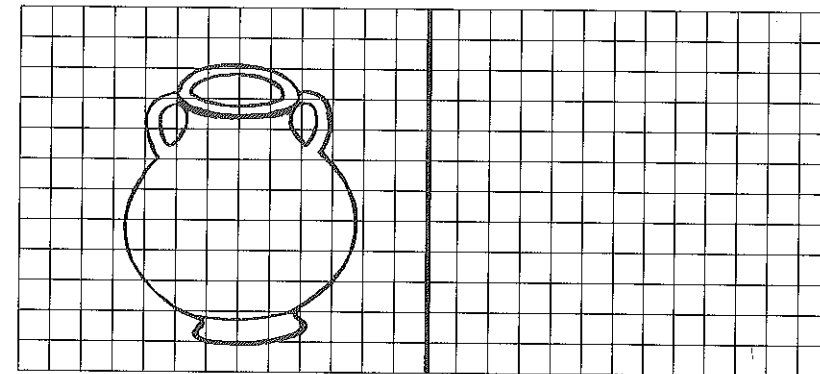
1. Biyey wey berandi ma ngi cele hinkantey tee.



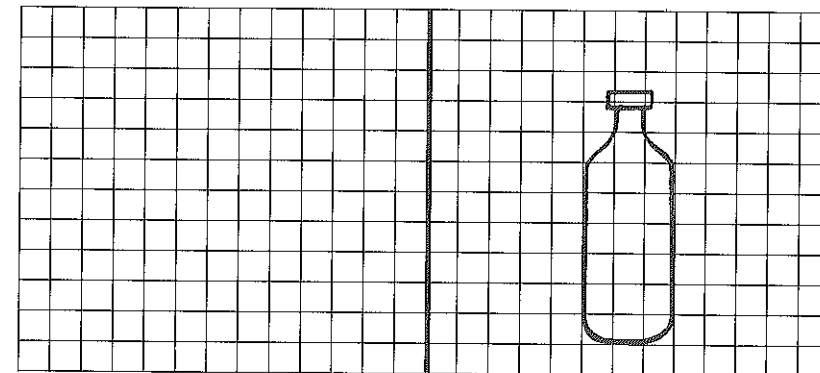
2. Biyoo woo berandi m'a timmandi taka kaŋ ra ma duu zeeri kul kaŋ goo a ra, celaa. Macin bii no ? Maayoo hantum.



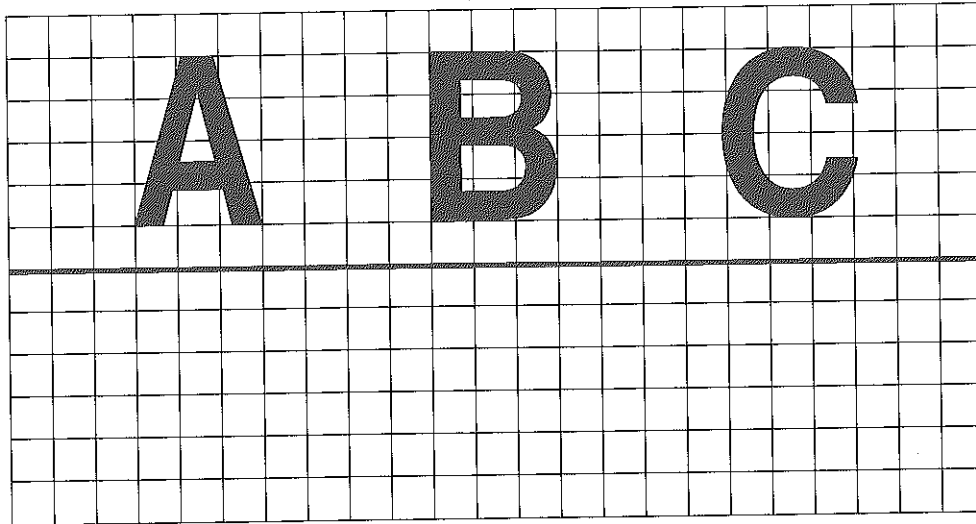
3. Biyoo berandi ma nga celaa tee.



4. Biyoo berandi ma nga celaa tee.



5. Biyoo berandi, ma harfey celey tee zeeroo ga.



31

## Bii tansandiyan zuu gaaru-gaarante ga (tansandiyan)

**Taasiha :** Taaliboo ma hin :

- ka bii kaɗ i n'a tansandi zuu gaaru-gaarante ra, kanjey dogey bay doo jinaa nd'ikora ra ;
- ka jinay kaɗ tansi ka hun nongu foo ra ka koy nongu tana ra, nongey dogey bay biyoo ga, tansiroo jine nda tansiroo banda ga.

**Kabu cahante :**

Kabu nda mise hinka :

$$10 + 5 + 2 ; \quad 20 + 40 + 37 ; \quad 50 + 60 + 30$$

**Bonhaw :** Muusa na garbay (ga) 25 kurma, Fanta duu garbay 47, Ali duu ize 10. Garbay marje i duu cere ra ?

**Bonfeeray :**

I kul duu

$$\text{ga } 25 + \text{ga } 47 + \text{ga } 10 = \text{ga } 82$$

$$\text{wala } (47 + 25) + 10 = 82$$

$$\text{wala } 47 + (25 + 10) = 82$$

**Laasaabu :**

$$25 + 47 + 10 = (25 + 47) + 10 \text{ wala } 25 + (47 + 10)$$

Tontonyan ra hinnawey kaɗ ga hanga, ga hin ka mara nda taka boobo. Woo se i ga nee **marakasinayyan**\*.

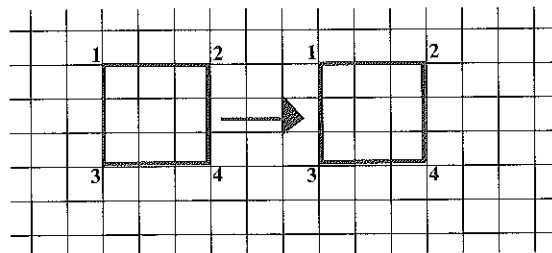
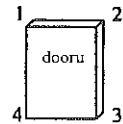
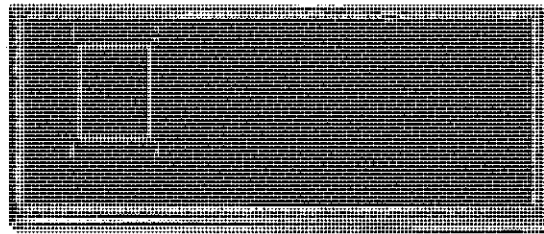
**Goyjinawey :** Galankaari bata, muulu, kaddasu zuu gaaru-gaarante.

\* marakasinayyan : associativité



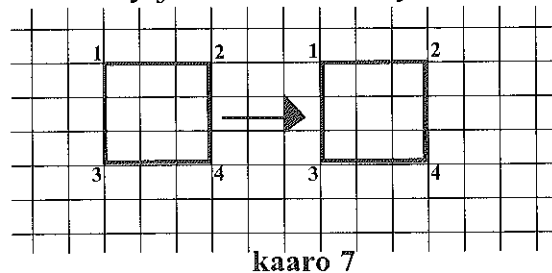
**Goyey**

**Goy jinaa :** Galankaari bata dam walhabeeroo ga zuu gaaru-gaarante ra, ma nga biyoo tee. Lanba dam boŋey ga. Bataa tansandi ni kanba gumaa here bila nd'a ma kuubi. Dogoo zeeri (doo koraa), ma lanba dam boŋey ga.



Taalibey ma bii hinkaa boŋey kaŋ ga ti maa foo, gamey neesi ka ngi alkadaroo bay. Kaarowey kaŋ goo gamey ra kul hinnaa ga sawa.

**Goy hinkantoo :** Goy jinaa filla ma biyoo tansandi nda kaaro 7.

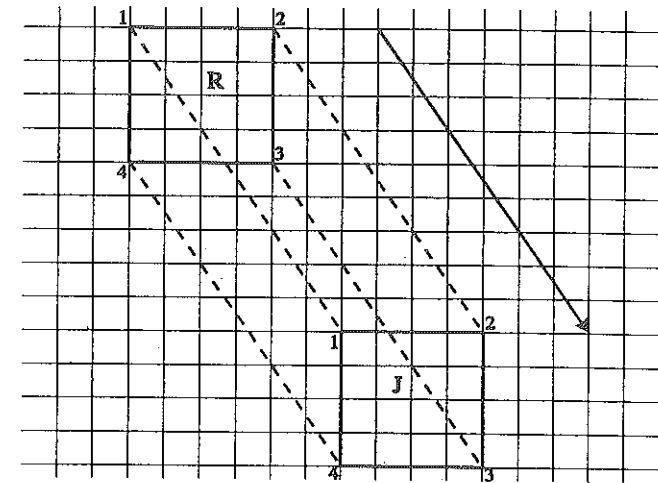


Duu kaaro hinnaa kaŋ goo bii jinaa boŋ 1 nda bii hinkantoo boŋ 1 gamoo ra.

- Woo da tee :     bii jinaa boŋ 2 nda ihinkantoo boŋ 2
- bii jinaa boŋ 3 nda ihinkantoo boŋ 3
- bii jinaa boŋ 4 nda ihinkantoo boŋ 4

Macin no n'n'a laasaabu ?

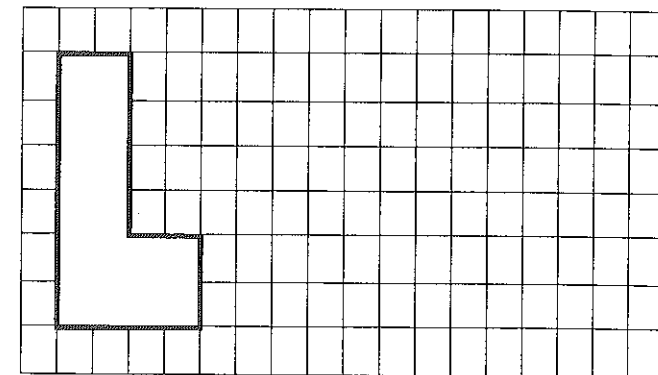
**Goy hinzantoo :** Biyoo woo siirandi nda cerea zuu gaaru-gaarante ra, ma lanba dam boŋey ga sanda goy jinaa takaa. Ma boŋey dobu cere ga nda zeeri tonbi-tonbante\*.



Alfagaa ma taalibey hãa wala zeeri tonbi-tonbantey kuuyaney ga sawa, wala zeeri taacaa ga ceesi cere se.

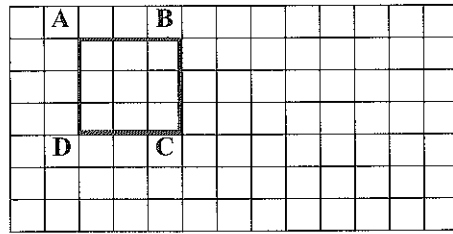
**Goy taacantoo :** Biyoo woo « L » tansandi zuu gaaru-gaarantaa ra nga zuu kanantey bande ma kay kaaro 12 ga.

**Laasaabu :** « L » masi kuubi.

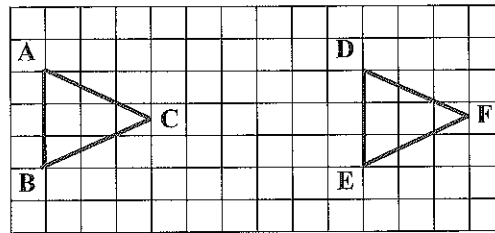


\* tonbi-tonbante : pointillé

**Goy guwantoo :** Kaare kanj cerea ga sawa nda kaaro 3 dunbu zuu gaaru-gaarante ra. Kaare woo tee zuu gaaru-gaarante ra ma dogoo silbay. A tansandi ni kanba gumaa here nda kaaro 5. Biyoo filla nga doo tejoo ra.



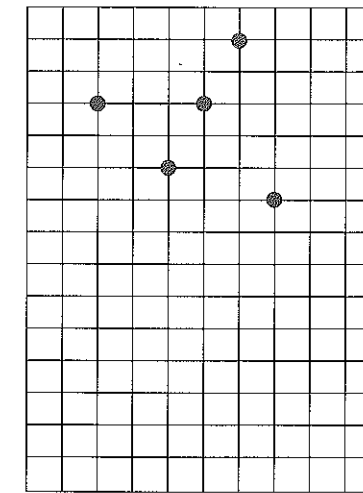
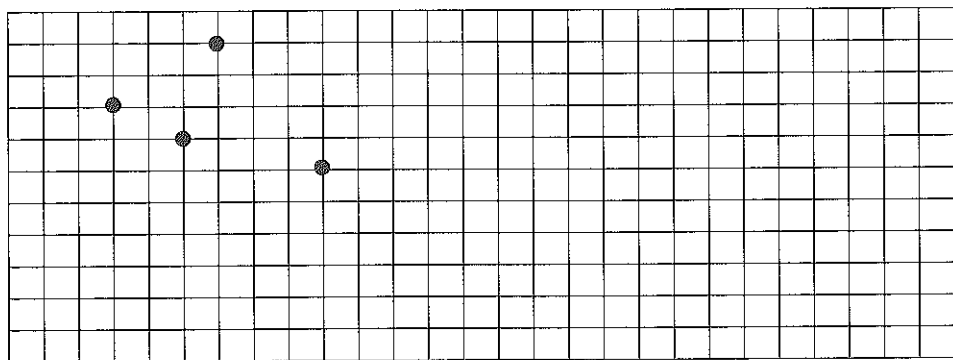
**Goy idduwantoo :**



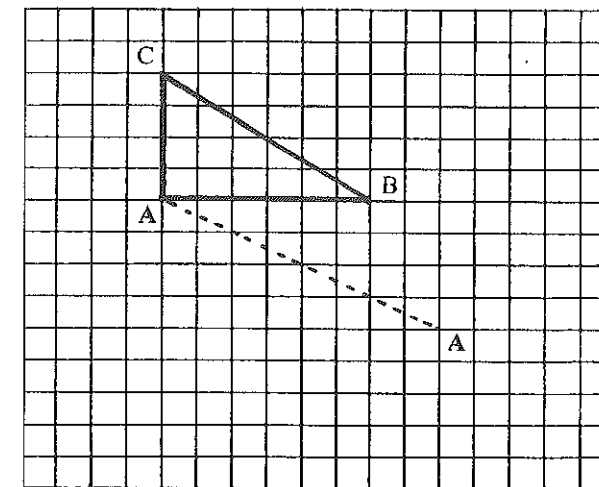
Kanjehinzaa ABC tansi zuu gaaru-gaarantaa kanandoo bande ka hun nga doo jinaa ra ka kaa ihinkantoo ra. Alfagaa ma nee taalibey ma hāayaney wey zaabi. Man ti A, B nda C doo taagey ? AD, CF, nda BE zeeri dunbey kuuyaney deedandi. Macin no n'ga hin k'a har AD, CF nda BE zeeri serrantey ga ?

**Denden :**

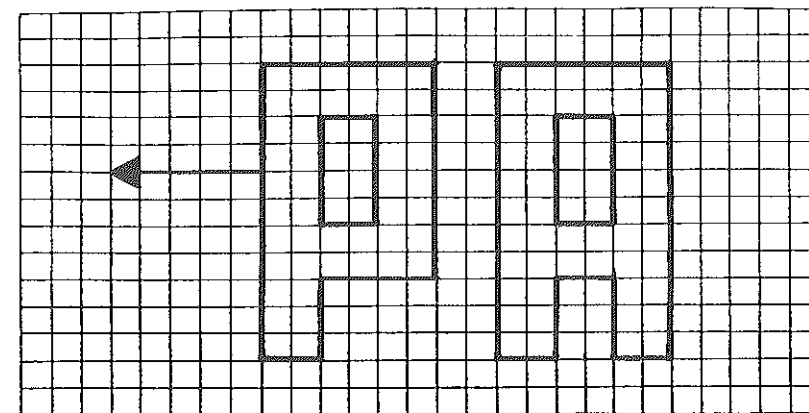
1 Tonbey wey tansandi nda ganda kaaro 5 alkadar ra, ma bii taagaa tee.



2. Kanjehinzaa woo tansandi zeeri tonbi-tonbantaa bande. Bii taagaa tee.

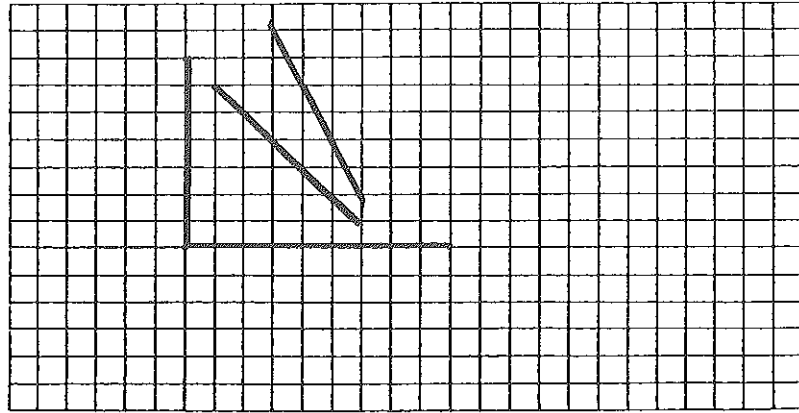


6. Harfu hinkaa woo tansandi nda kaaro 12 haḡaa\* bande



\* haḡaw : flèche

7. Biyoo tansandi nda kaaro 4 ni kanba gumaa here ma bii taagaa tee hala cee 3.



## Bii beerandiyanoo nda nga kaccandiyanoo zuu gaaru-gaarante ra

**Taasiha :** Taaliboo ma hin :

- ka bii kanj goo kaaro kaccaw zuu gaaru-gaarante ra beerandi kaaro beeri zuu gaaru-gaarante ra bila boro ma kaarowey hinnaa barmay ;
- ka bii beerandi zuu gaaru-gaarante ra nda carawey kaarowey hinnaa taabuyan cee 2 wala 3 wala 4 ;
- ka bii kanj goo kaaro beeri zuu gaaru-gaarante ra kaccandi kaaro kaccaw zuu gaaru-gaarante ra bila boro ma kaarowey hinnaa barmay ;
- ka bii kaccandi zuu gaaru-gaarante ra nda carawey kaarowey hinnaa zannayan cee 2 wala 4.

**Kabu cahante :**

- Hinnaaway dogey barmay ma duu dimmaa.  
 $25 + 20 =$   
 $47 + 10 =$

Dimmawey wey affoo kul saku nda iwoyboŋ hinka kanj ga hanga cere :

$$11 + 47 ; 29 + 64 ; 37 + 56$$

**Goyjinawey :**

Kalam, zeeribundu, kaddasu kanj ga kaaro beeri zuu gaaru-gaarante goo, kaddasu kanj ga kaaro kaccaw zuu gaaru-gaarante goo.

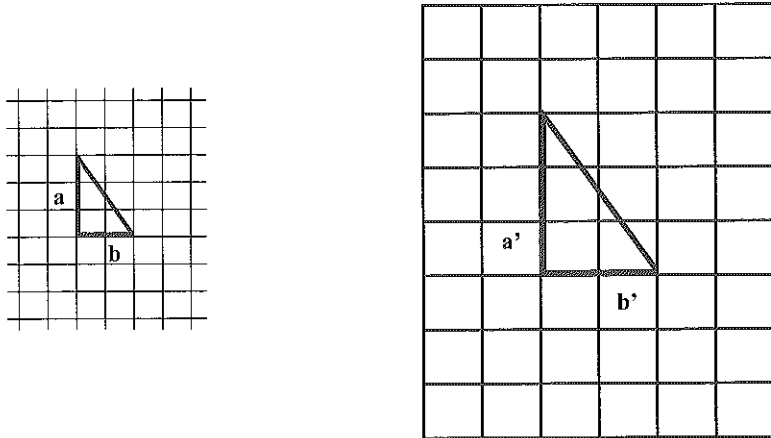
**I.Beerandiyani**

**Goy jinaa :** Alfagaa ma zuu gaaru-gaarante hinka tee walhabeeroo ga : affaa kaaro beeri, affaa kaaro kaccaw.

A ma kanjehinza gorante tee kaaro kaccaw zuu gaaru-gaarante ra.

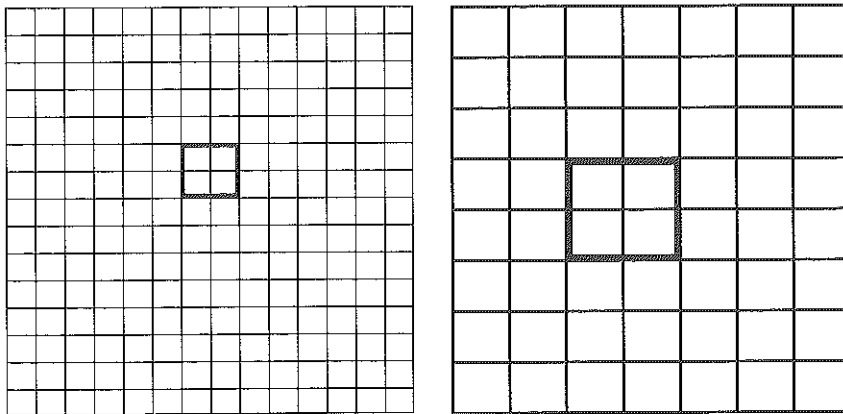
Taalibey ma kaaro hinnaa bay kaŋ goo caraw kayantaa nda tikoo se. Alfagaa ma nee taalibey ma kanjehinzaa berandi nda nga kaaro hinnaa kaaro beeri zuu gaaru-gaarantaa ra. Woo ti ir na kanjehinzaa beerandi.

NB : Alfagaa ga gaabandi biyoo kaarowey hinnawey ma hin ka zamnandi nda 2 wala 3 wala 4 sanda : 12, 24, 36...



**Goy hinkantoo :**

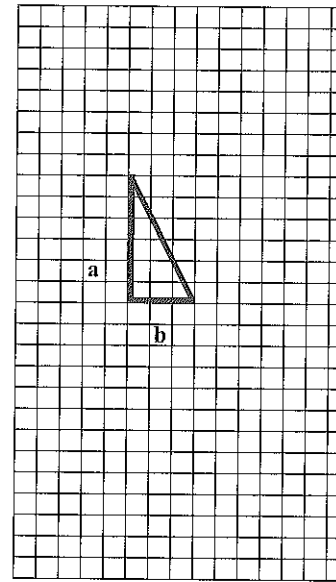
Alfagaa ma kaareyaŋ tee zuu gaaru-gaarante kaaro kaccuyaŋ ra, a m'i zemna taalibey game. A ma nee taalibi foo kul ma kaarewoo tee zuu gaaru-gaarante kaaro beeroo ra.



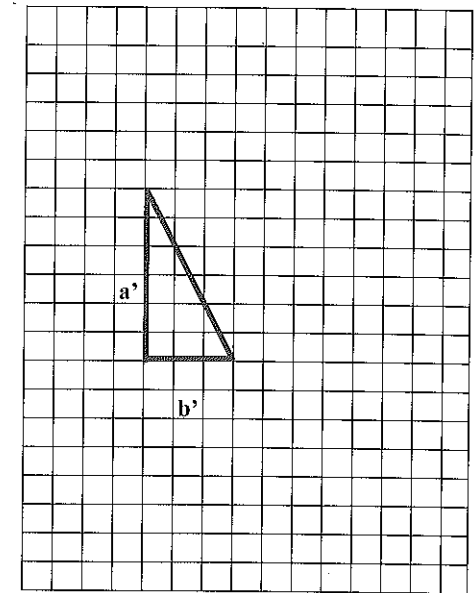
**Denden :**

1. Bii hinkaa woo laasaabu.

Bii 1



Bii 2



Bii 1

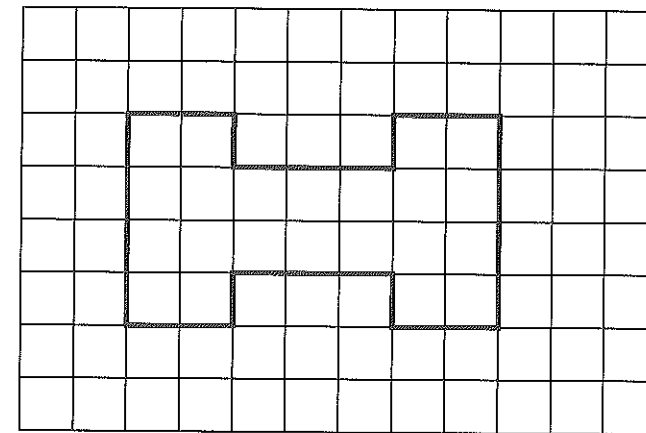
Kaaro marje ka caraw hinkaa *a* nda *b* cin ?

Bii 2

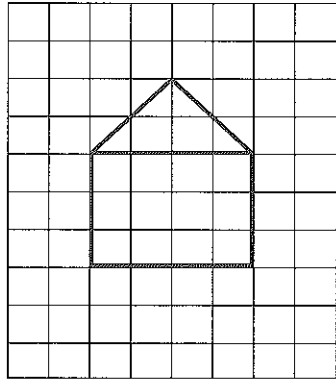
Kaaro marje ka caraw hinkaa *a* nda *b* cin ?

Kanjehinza hinkaa ga hima wala ?

2. Biyoo woo beerandi zuu gaaru-gaarante ga nda kaaro hinna follokaa.



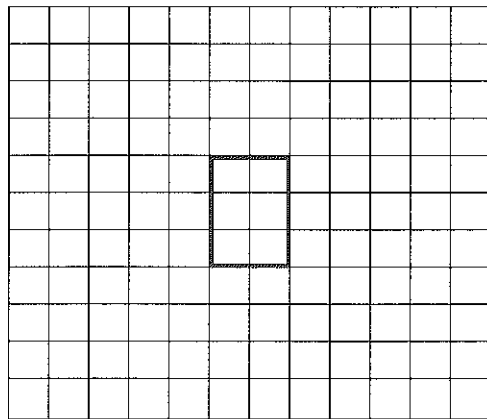
4. Biyoo woo beerandi zuu gaaru-gaarante ga nda hinna follokaa.



**II. Kaccandiyan :**

**Goy jinaa :**

Alfagaa ma kaaro beeri zuu gaaru-gaarante tee walhabeeroo ga. A ma muulu bii tee a ra kan kuuyanoo ga ti kaaro 3, hayyanoo ga ti kaaro 2.

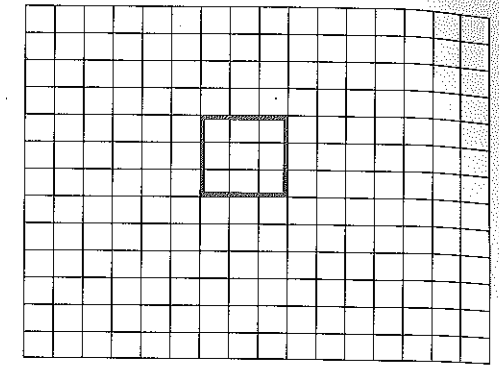
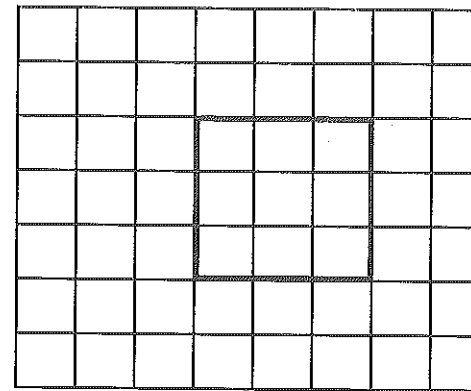


Alfagaa ma nee taalibey ma muulu biyoo tee kaaro kaccaw zuu gaaru-gaarantaa ra.

**Woo ti i na muulubiyoo kaccandi.**

**Goy hinkantoo :**

Alfagaa ma kaare kaaro beeri zuu gaaru-gaaranteyan tee, a m'i zamna taalibey game. A ma nee taalibi foo kul ma kaare woo berandi kaaro kaccaw zuu gaaru-gaaranteyan ra.



**Goy hinzantoo :**

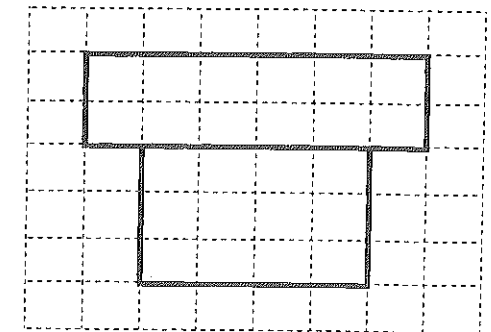
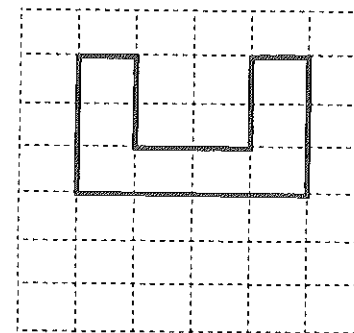
Alfagaa ma nee taalibey ma muulubii tee zuu gaaru-gaarante ga. Muulubiyoo caraw beeroo ti kaaro 12, caraw kaccaa ti kaaro 6. Taalibey ma muulubiyoo kaccandi nda cerawey kaarowey hinnaa zamnayan cee 2.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma yee goy hinzantoo ga nda kaare kan ceraa ti kaaro 12.

**Denden :**

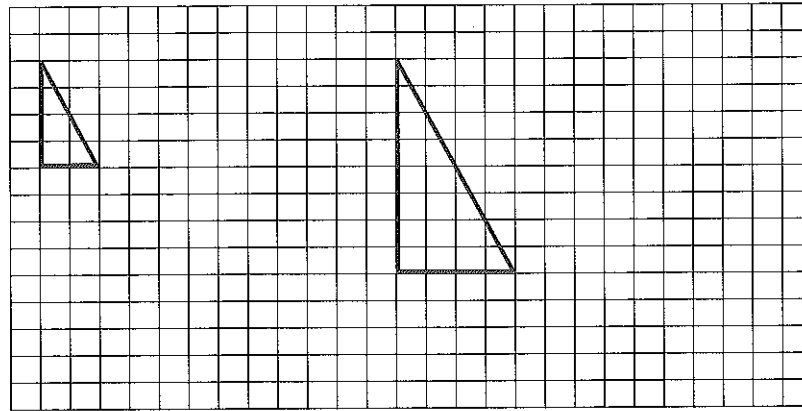
1. Biyey wey kaccandi ni tiiraa ra.



2. Muulubii tee zuu gaaru-gaarante ra. A beerandi hala ceraw foo kul ma kuu cee hinka.

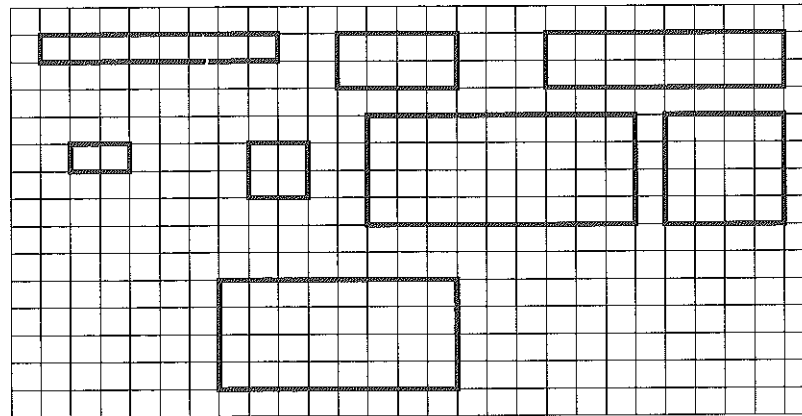
3. Kalimanaa foo kul timmandi nda kalimawey wey affoo : beerandiyan, kaccandiyan.

A ti B.....  
B ti A.....



4. Biyey wey guna:

- ma woo kaŋ ti D beerandiyanoo lanbaa hantum ;
- ma woo kaŋ ti D kaccandiyanoo lanbaa hantum.



## Muulu (paralelepiped) : moyey\*, jesejy nda boŋey

**Taasiha :** Taaliboo ma hin :

- ka muulu bay šendi- šendi dumi booboyaŋ gamey ra ;
- ka moyey bay, ka ngi hinnaa bay, nda ngi takaroo\* ;
- ka haya kaŋ goo moyey gamey ra, bay ;
- ka jesejy nda boŋey bay, ka ngi hinnaa bay.

**Kabu cahante :**

Ka taaba nda 3

1. Alfagaa ma nee taalibey ma 3 taabudaaroo filla.
2. Aru 3 goo cere bande, affoo kul goo nda markasu 15 moo nga saakoo ra. Moo markasu marje bara ngi boro 3 kone ?
3. Turi-ize 54 goo kokondo foo ra. Tuuri-ize marje bara kokondo hinza ra ?
4. Zaabey wey, affoo kul saku nda zanguboŋ hinka kaŋ ga hanga cere :

$$158 + 612 ; 314 + 493 ; 207 + 687$$

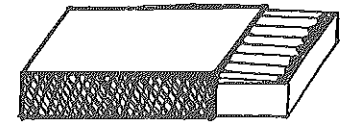
**Goyjinawey :**

Almeyti bata, kaddasu zuu gaaru-gaarante, kiryoŋ, zeeribundu...

**Goyey :**

**Goy jinaa :** Alfagaa ma almeyti bata foo zaa,

a m'a cebe taalibey se, i m'a guna, i m'a laasaabu. Alfagaa ma moyoo cebe, a ma moo foo tana cebe, taalibey ma moyey cebe, i m'i kabu, i ma lanba dam i ga.



Taalibey ma dii, i ma bay kaŋ moo 6 bara a se.

Alfagaa ma nee i ma moo foo takaroo guna (hala i ma duu ka muuloo bay)

\* moo : face

\* takari : alhaali (forme)

- Alfagaa ma haa wala moyey kul ga hima nda muulubii.
- Alfagaa ma haa wala mooyan goo no kan ga sawa ihinka-hinka.

Taalibey ma nee moyey ga sawa ihinka-hinka. I ma nee moyey kan ga cere guna ihinka-hinka ga sawa.

**Goy hinkantoo :**

Alfagaa ma almeyti bataa fur kaddasu boŋ, a m'a diidal nda zeeri, a m'a bere moo foo ga, a m'a diidal nda zeeri.

Taalibey ma dii kan moo hinkaa woo ga taalamme.

Zeeroo kan goo gamey ra, taabari no kan se i ga nee : jese

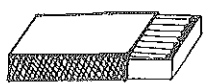
1	2
---	---

**Goy hinzantoo :**

Alfagaa ma nee taalibey se : « Moyey cerawey ti muulu jesey. »

Alfagaa ma nee taalibey ma ngi hinnaa har. A ma nee koyne kan moyey boŋey ti muulu boŋey.

Alfagaa ma nee taalibey ma ngi hinnaa har.

	moyey hinnaa	jesey hinnaa	boŋey hinnaa
	6	12	8

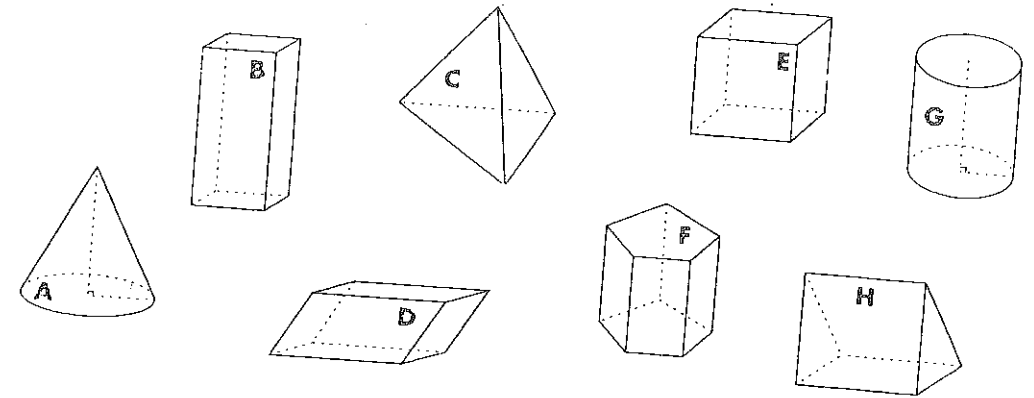
Alfagaa ma nee taalibey ma goy 1, 2 nda 3 zaabey hantum daaroo woo ra.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma jinay guu har kan ga hima nda muulu sanda saafun dunbu, sukar pake, kitaabu, feraw, sunduku.

**Goy guwantoo :**

Šendi-šendey wey guna.



Affoo kul moyey hinnaa, jesey hinnaa, boŋey hinnaa kabu.

Moyey alhaaloo filla.

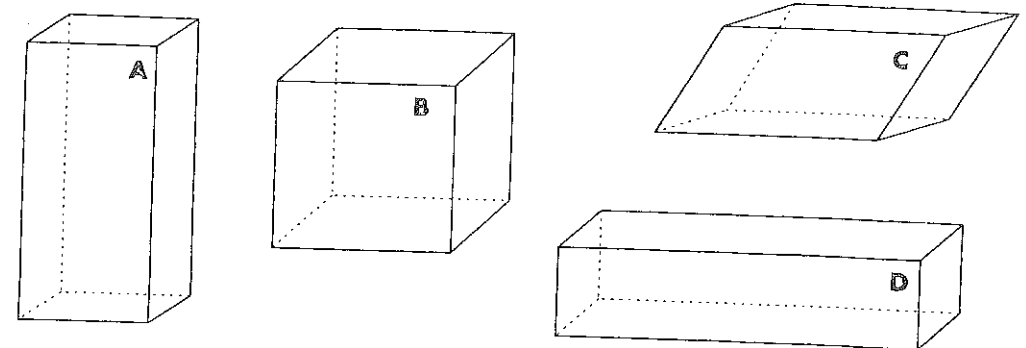
A.C.F.G nda H mana ti muulu.

B nda E ti muulu, D mana ti a.

Macin bara bii 3 gamey ra ?

**Denden**

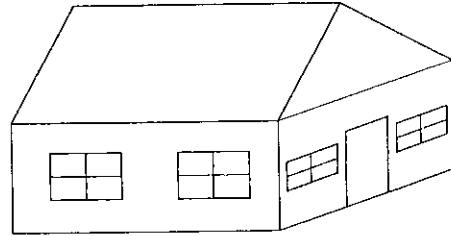
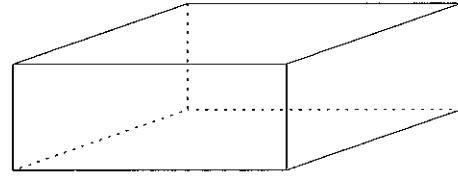
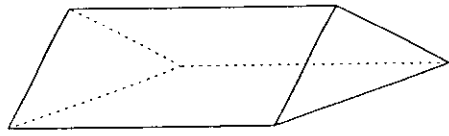
1. Biyey wey guna :



Affoo g'i ra kan mana ti muulu. Affoo no ? Daaroo woo timmandi.

	A	B	C	D
boŋey hinnaa	....	....	....	....
moyey hinnaa	....	....	....	....
moyey kan ga ti kaare wala muulu, hinnaa	....	....	....	....
jesey hinnaa	....	....	....	....

2. Nda n'ga baa ma hugoo woo cin, a cin nda šendi- šendi hinkaa woo. Šendi- šendoo kaŋ ga hima muulu, noona.



**Taasiha :** Taaliboo ma hin :

- ka kib bay šendi- šendi dumi booboyaŋ gamey ra ;
- ka moyey bay, ka ngi hinnaa bay, nda ngi takaroo \* ;
- ka haya kaŋ goo moyey gamey ra bay ;
- ka jesity nda boŋey bay, ka ngi hinnaa bay.

**Kabu cahante :**

Hinnawey : 61 ; 248 ; 3500 saku  
nda iwoyboŋ  
nda zanguboŋ  
nda zenberboŋ.

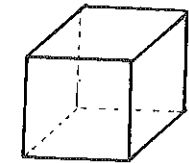
Zaabey wey affoo kul saku nda iwoyboŋ hinka kaŋ ga hanga cere :  
1417 + 3875 ; 2504 + 5495 ; 4475 + 5050

**Goyjinawey :**

Galankaari bata, kaddasu zuu gaaru-gaarante, kiryoŋ,  
zeeribundu...

**Goyey**

**Goy jinaa :** Alfagaa ma galankaari bata foo zaa,  
a m'a cebe taalibey se, i m'a guna, i m'a  
laasaabu. Alfagaa ma moyoo cebe, a ma  
moo foo tana cebe, taalibey ma moyey  
cebe, i m'i kabu, i ma lanba dam i ga.



Taalibey ma dii, i ma bay kaŋ moo 6 bara a se.

Alfagaa ma nee i ma moo foo takaroo guna (hala i ma duu ka kib bay)

Alfagaa ma hãa wala moyey kul ga hima nda kaare.

Alfagaa ma hãa wala mooyaŋ goo no kaŋ ga sawa ihinka-hinka.

\* takari : alhaali (forme)



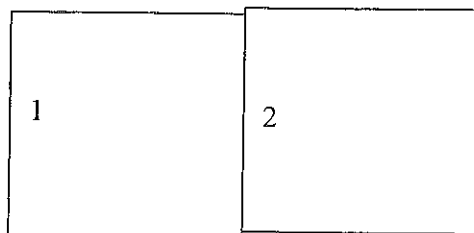
Taalibey ma nee moyey ga sawa ihinka-hinka. I ma nee moyey kaŋ ga cere guna ihinka-hinka ga sawa. Deedandi banda ga, i ma laasaabu kaŋ moyey kul ga sawa.

**Goy hinkantoo :**

Alfagaa ma galankaari bataa fur kaɗdasu boŋ, a m'a diidal nda zeeri, a m'a bere moo foo ga, a m'a diidal nda zeeri.

Taalibey ma dii kaŋ moo hinkaa woo ga taalamme.

Zeeroo kaŋ goo gamey ra, taabari no kaŋ se i ga nee : jese



**Goy hinzantoo :**

Alfagaa ma nee taalibey se moyey cerawey ti kib jesey.

Alfagaa ma nee taalibey ma ngi hinnaa har. A ma nee koyne kaŋ moyey boŋey ti kib boŋey.

Alfagaa ma nee taalibey ma ngi hinnaa har.

Bôte de craie Inserrer image	moyey hinnaa	jesey hinnaa	boŋey hinnaa
	6	12	8

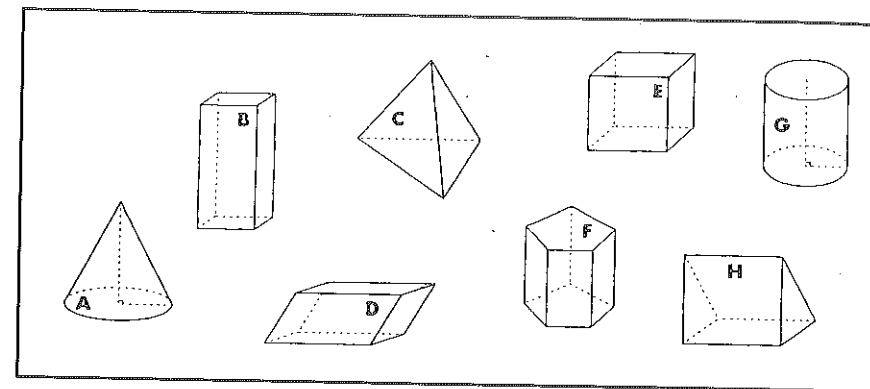
Alfagaa ma nee taalibey ma goy 1, 2 nda 3 zaabey hantum daaroo woo ra.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma jinay guu har kaŋ ga hima nda kib sanda saafun dunbu, sukar-ize, attay fiita g 500 bata.

**Goy guwantoo :**

Šendi-šendey wey guna.



Affoo kul moyey hinnaa, jesey hinnaa, boŋey hinnaa kabu. Moyey alhaaloo filla.

A.C.F.G nda H mana ti kib.

B nda E ti kib D mana ti a.

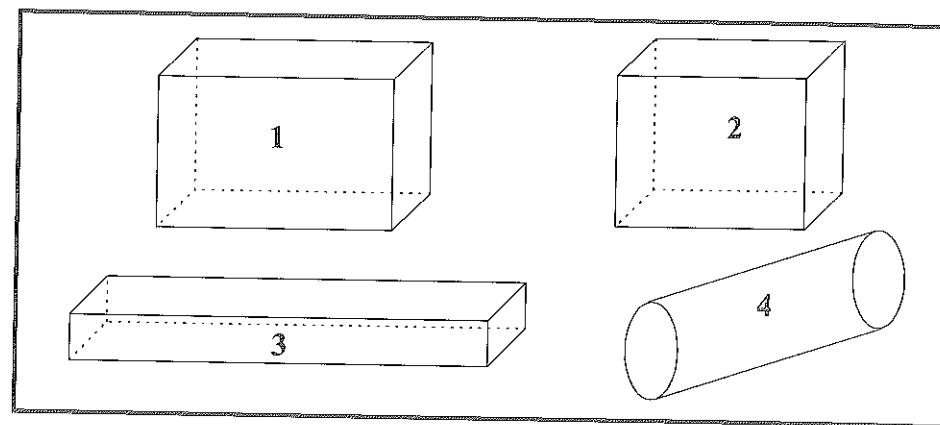
Macin bara bii 3 gamey ra ?

**Duurandi :**

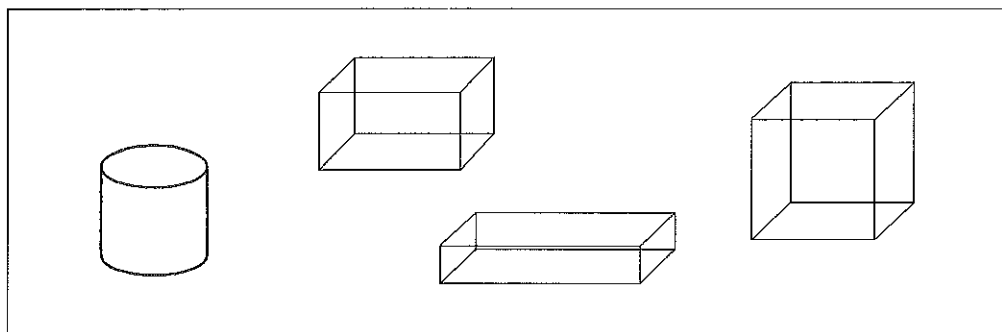
- kib goo nda moo iddu kaŋ ga tee kaare, i ga sawa.
- Kib goo nda jese 12 kaŋ ga sawa.
- Kib goo nda boŋ 8.

**Denden**

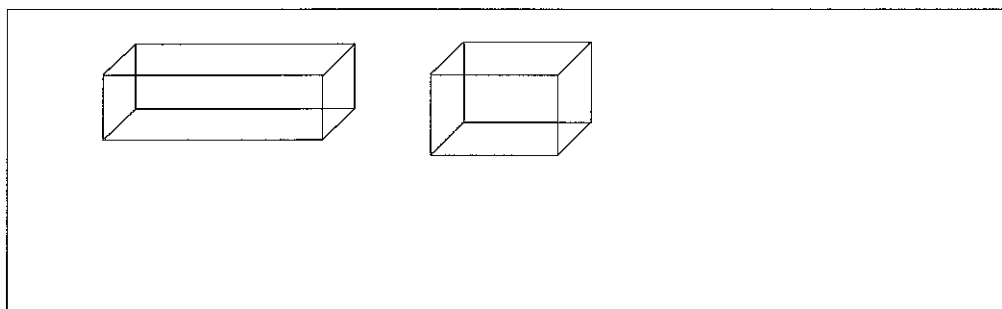
1. Biyey laasaabu ma kabu-izoo kaŋ goo kiboo ra hantum.



2. Biyey wey laasaabu ma kiboo moo foo cirandi.

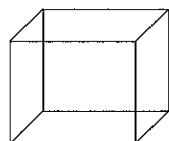


3. Biyey laasaabu ma kiboo dam boŋey ga.



4. Kiboo guna ka boori, ma hāayaney zaabi.

- Moo marje bara a se ?
- Jese marje bar'a se ?
- Boŋ marje bar'a se ?



## 35 Kib : biyoo cinayanoo nda muulu biyoo cinayanoo

**Taasiha :** Taaliboo ma hin :

- ka kib cin ;
- ka muulu cin ;
- ka kib biyoo tee ;
- ka muulu biyoo tee.

**Kabu cahante :**

Hinnawey wala dimmawey bisaceraa zimam.

Sanda :  $12 + 16 = 28$

$10 + 20 =$

$20 < 12 + 16 < 30$

30 ti  $12 + 16$  bisaceraa iwoyboŋ ra.

$143 + 167 \dots$  iwoyboŋ ra

$47 + 31 ; 97 - 38$

$236 + 447 = \dots$  zanguboŋ ra

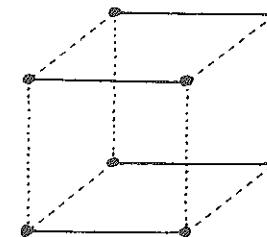
$89 + 27$

**Goyjinawey :**

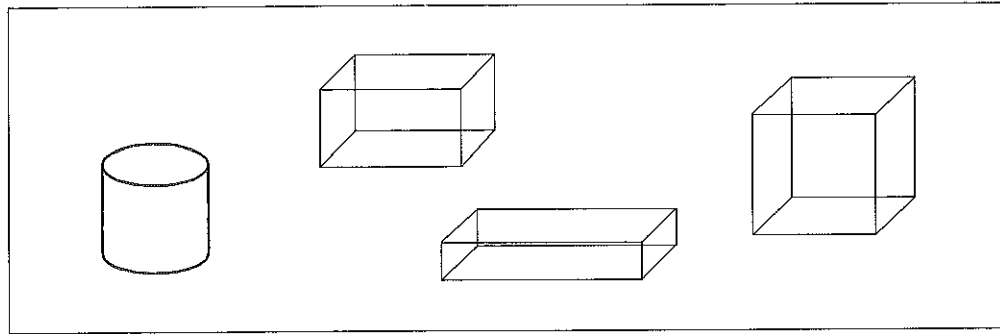
Kib, muulu, labudiini, bundu-ize, zeeriji, kaddasu sanda zuu gaaru-gaarante.

**Goyey**

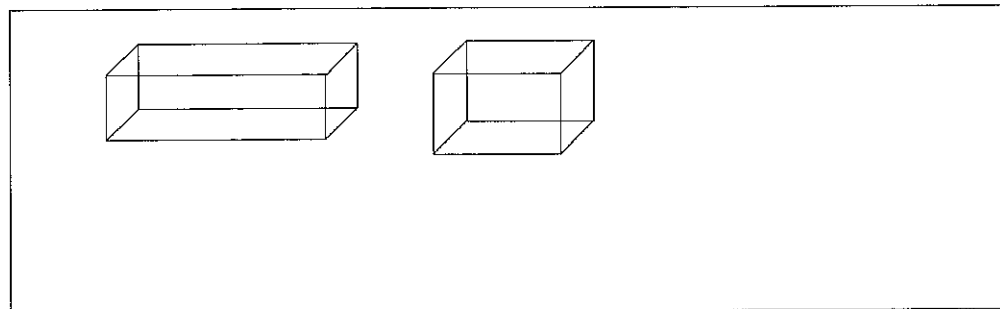
**Goy jinaa :** Alfagaa ma taalibey fattandi batumaa ra, a m'i fay kuray-kuray, ka kuray foo kul noo nga goyjinawey, a ma nee i ma kib cin nda labudiini nda bundu-ize woy cindi hinka. Bundu-izey ma tee jese, labudiinoo ma tee boŋey.



2. Biyey wey laasaabu ma kiboo moo foo cirandi.

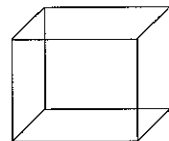


3. Biyey laasaabu ma kiboo dam boŋey ga.



4. Kiboo guna ka boori, ma h̄āyaney zaabi.

- Moo marje bara a se ?
- Jese marje bar'a se ?
- Boŋ marje bar'a se ?



35

## Kib : biyoo cinayanoo nda muulu biyoo cinayanoo

**Taasiha :** Taaliboo ma hin :

- ka kib cin ;
- ka muulu cin ;
- ka kib biyoo tee ;
- ka muulu biyoo tee.

**Kabu cahante :**

Hinnawey wala dimmawey bisaceraa zimam.

Sanda :  $12 + 16 = 28$

$10 + 20 =$

$20 < 12 + 16 < 30$

30 ti  $12 + 16$  bisaceraa iwoyboŋ ra.

$143 + 167...$  iwoyboŋ ra

$47 + 31 ; 97 - 38$

$236 + 447 = ...$  zanguboŋ ra

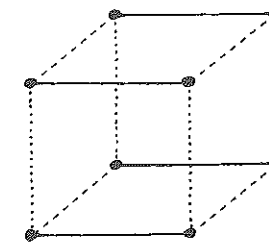
$89 + 27$

**Goyjinawey :**

Kib, muulu, labudiini, bundu-ize, zeeriji, kaddasu sanda zuu gaaru-gaarante.

**Goyey**

**Goy jinaa :** Alfagaa ma taalibey fattandi batumaa ra, a m'i fay kuray-kuray, ka kuray foo kul noo nga goyjinawey, a ma nee i ma kib cin nda labudiini nda bundu-ize woy cindi hinka. Bundu-izey ma tee jese, labudiinoo ma tee boŋey.

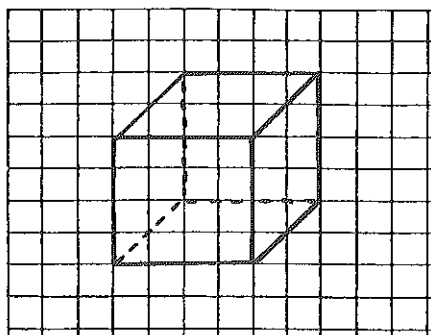


**Goy hinkantoo :**

Alfagaa ma nee taalibey ma kib biyoo tee zuu gaaru-gaarante ra. I ma hanga yaamarey wey bande ka goyoo tee :

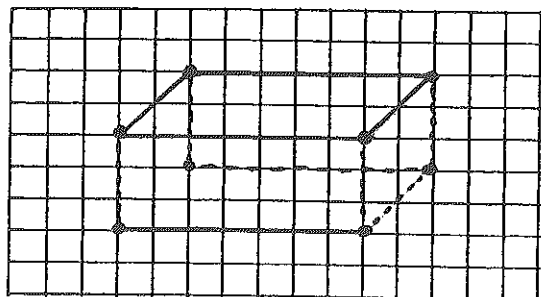
- kaare tee ;
- gamekuna zeerey kubay dogoo ga, ma kaare tana tee kaŋ nd'ijinaa kuuyaney ga sawa ;
- ma ijinaa boŋey dobu ihinkantoo waney ga nda zeeri siirante.

Alfagaa ma nee taalibey ma kib tee kaddasu kaaray ga nda zeeribundu nda kanje-gorante zeeriji.



**Goy hinzantoo :**

Alfagaa ma taalibey fattandi batumaa ra, a m'i fay-fay kuray. Kuray foo kul a m'a noo nga goyjinawey. Alfagaa ma nee i ma muulu biyoo cin nda labudiini nda bundu-ize. Bundu-izey ga tee jese labudiinoo ga tee boŋey.



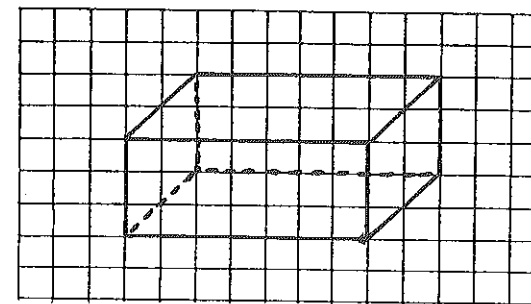
**Goy taacantoo :**

Alfagaa ma nee taalibey ma muulu biyoo tee zuu gaaru-gaarante ga. I ma hanga yaamarey wey bande ka goyoo tee :

- muulu tee ;
- gamekuna zeerey kubay dogoo ga, muulu tana tee kaŋ nd'ijinaa kuuyaney ga sawa ;

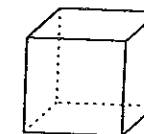
- ma ijinaa boŋey dobu ihinkantoo waney ga nda zeeri siirante.

Alfagaa ma nee taalibey ma muulu tee kaddasu kaaray ga nda zeeribundu nda kanje-gorante-zeeriji.

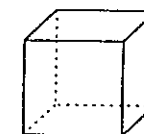


**Denden**

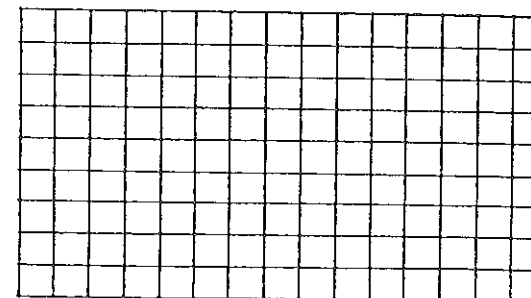
1. Kiboo woo biyoo laasaabu.
  - a. Jese marje bara moo se ?
  - b. Jese marje bara kiboo se ?
  - c. Boŋ marje bara a se ?
  - d. Boŋ foo, jese marje ma koy a ga ?



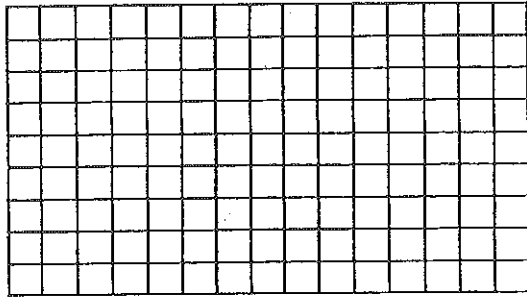
2. Boro ga hun A doo ka koy E ga ka jese taaci tee fondo sanda : ABGHE ; duu fondo tana foo kaŋ ga hanga jese taaci bande.



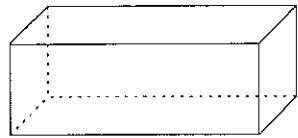
3. Kib biyoo tee zuu-zuuyanoo ra.



4. Muulu biyoo tee zuu gaaru-gaarantaa ra.



5. Muulu biyoo laasaabu, ma hāayaney zaabi.



- moo marje bar'a se ?
- jese marje bar'a se ?
- boŋ marje bar' se ?

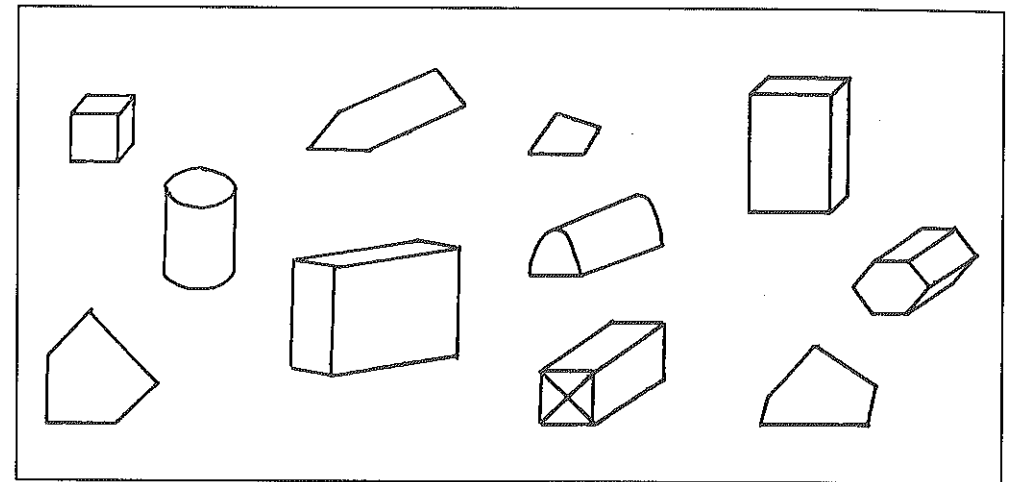
Alfagaa ma nee taalibey ma dendeney wey tee.

Hinnawey wey bisacaraa hantum

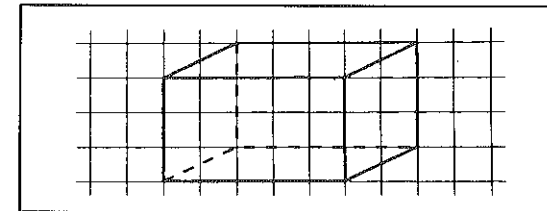
$$157 - 407 ; 849 + 451 ; 107 + 639 ; 207 - 141$$

1. Biyey wey guna ma duu jinawey maapey :

- kaŋ ga hima muulu ;
- kaŋ ga hima kib.

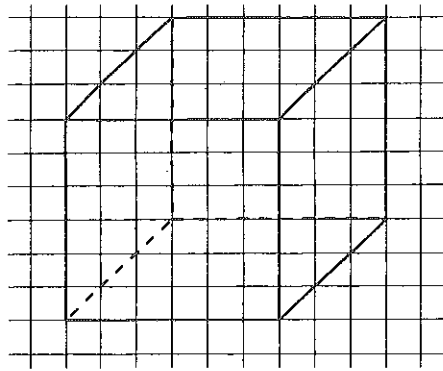


2. Muulu biyoo guna m'a berandi kaddasu zuu gaaru-gaarante ga.

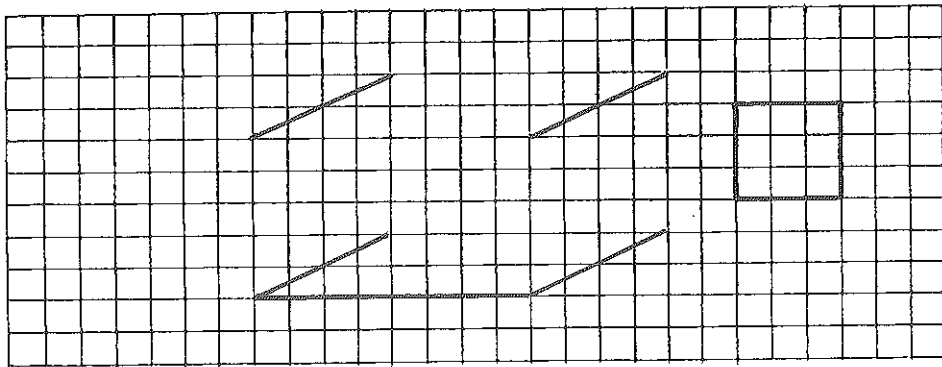


3. Muulu bii foo tee kaddasu ga bila zuu gaaru-gaarante, nda zeeribundu nda kanje-gorante zeeriji.

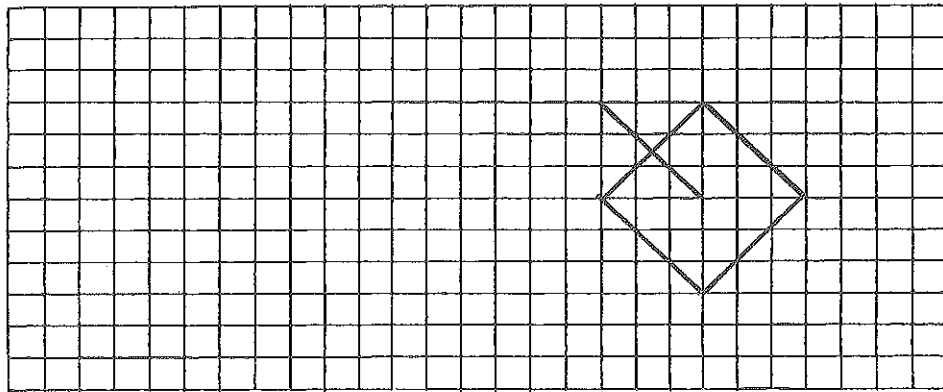
4. Kib biyoo guna, m'a tee kaddasu zuu gaaru-gaarante ga.



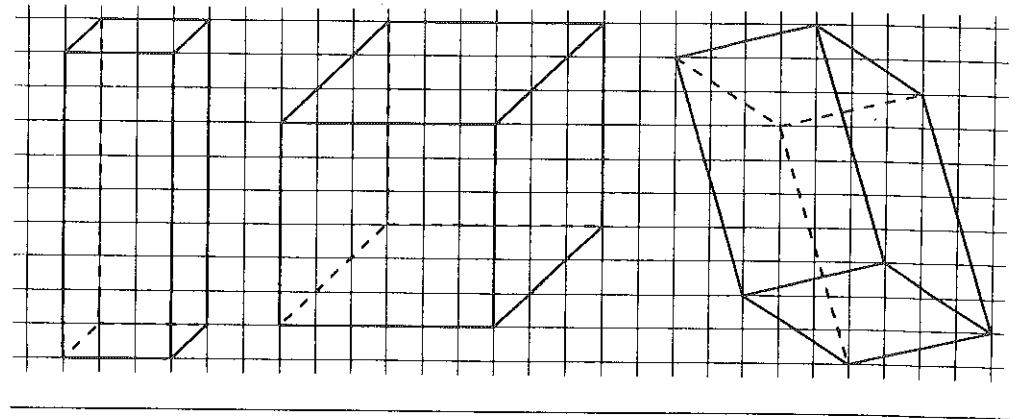
5. Kib biyoo tee kaddasu ga bila zuu gaaru-gaarante, nda zeeribundu nda kanje-gorante zeeriji.
6. Biyey wey guna m'i tee kaddasu zuu gaaru-gaarante ga, m'i timmandi ka duu kib.



7. Biyoo woo guna m'a tee kaddasu zuu gaaru-gaarante ga, m'a timmandi ka duu kib.



8. Biyey wey tee kaddasu zuu gaaru-gaarante ga.



# Silandar : tikoo, kayyanoo

**Taasiha :** Taaliboo ma hin :

- ka silandar bay ;
- ka silandar tikoo nda nga kayyanoo bay.

**Kabu cahante :**

Wa sasawandi nda zangubon manantaa :

- 103 zangubon sasawantaa manay ga ti 100.
- 270 zangubon sasawantaa manay ga ti 300
- 327 ; 795 ; 443 ; 832 ; 994.

Hinnawey wey bisacara hantum

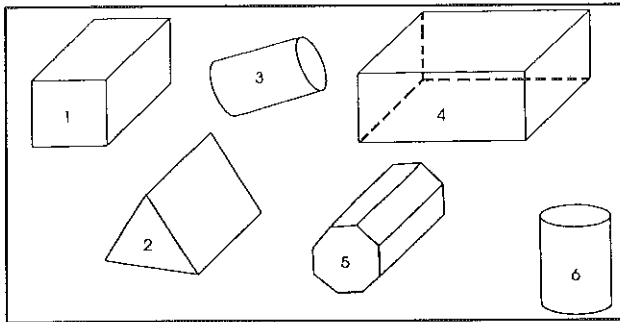
$$4745 + 8207 ; 6275 + 2617 ; 8450 + 7504 ; 8247 - 6751$$

**Goyjinawey :**

Jinay sii booboyan kan jerey ti silandar.

**Goyey**

**Goy jinaa :**



Alfagaa ma jinawey wey cebe taalibey se. A ma nee i ma wey kan i bay k'i caw, cebe sanda kib, muulu. Alfagaa ma nee i ma maayey har.

**Goy hinkantoo :** Alfagaa ma nee taalibey ma jinayyan guna kan tiki hinkaa ti wangante. Alfagaa ma nee taalibey ma nga takarey har (silandar).

**Goy hinzantoo :** Alfagaa ma nee taalibey ma silandar deedandi nda kib nda muulu.

Alfagaa ma taalibey haã wala silandar goo nda mooyan, wal'a goo nda bonyan, wal'a goo nda jeseyan.

- Woo din banda ga, alfagaa ma silandar tikoo nda nga kayyanoo cebe taalibey se, a ma nga maawey har.

**Laasaabu :**

Silandar sii nda moo, a sii nda jese.

Silandar goo nda tiki gungulante hinka, nda caraw gande\* kan ga golbu.

Silandar goo nda kayyan.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma tamaati bata wala waa poti tikoo diidalo tee nga walhawey ga. I ma biyey takarey har.

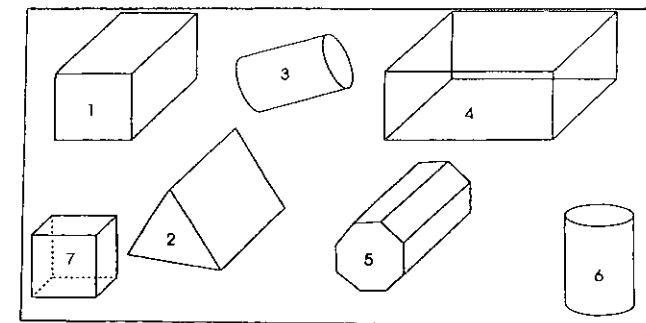


**Goy guwantoo :**

Alfagaa ma nee taalibey ma silandar tee nga kayyewey wala nga walhawey ga.

**Denden**

1. Biyey wey guna :

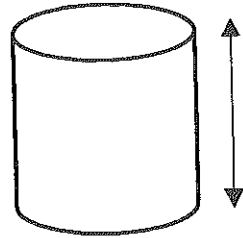


\* caraw gande : surface latérale

Hayey kaṅ nda silandar ga ti takari foo, lanbawey hantum.  
Gande marje bara silandar se ?  
Boṅ marje bar'a se ?

Hayey kaṅ ga hima muulu lanbawey hantum.  
Hayey kaṅ nda silandar ga ti takari foo, lanbawey hantum.

2. Silandar biyoo berandi ni kayyewoo ra, ma hayey kaṅ g'a silbay, hantum.



**Neesiri**



**Kuuyan : waafakay kuuyan kabu-izey (meetar beene taabarey nda ganda taabarey) berandiyan.**

**Taasiha :** Taaliboo ma hin :

- ka waafakay kuuyan kabu-izey bay : meetar, dekameetar, hektomeetar, kilomeetar, milimeetar, santimeetar, desimeetar ;
- ka goy nda meetar beene nda ganda taabarey ;
- ka haya neesi nda waafakay kuuyan kabu-ize ;
- ka hin ka kuuyan kabu-ize berandi.

**Kabu cahante :**

Hinnawey sasawandi zenberboŋ manantaa ga sanda : 7 800 zenberboŋ manantaa ti 8 000 wala 7 200 zenberboŋ manantaa ti 7 000.

1360 ; 2750 ; 4810 ; 7400 ; 8600.

**Goyjinawey :**

Kaddasu, bundu-ize, karfu, zeeribundu tam-tamante\*, kaddasu kaŋ goo nda zuu gaaru-gaarante, cebkarfu\* meetar10, meetar taabante, meetar kunkunante, sunbay.

**Goyey**

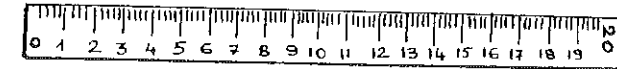
**Goy jinaa :**

\* tam-tamante : gradué  
\* cebkarfu : chaîne d'arpenteur

Alfagaa ma nee taalibey ma haya booboyaŋ kuuyanoo zimam ; i ma zeeribundu zaa k'i neesi. I ma kuuyanoo har meetar, desimeetar wala santimeetar ra. Taalibey ma faya kuray hinza : kuray jinaa ma walhabeeroo neesi ; kuray hinkantoo ma kitaabu foo neesi, kuray hinzantoo ma cawhugoo funeetar foo neesi. Taalibey ma zaabey hantum hinna timmante\* manantaa ga. Taalibey ma laasaabu kaŋ kuuyaney si sawa.

**Goy hinkantoo :** Alfagaa ma nee taalibey ma kaddasu zuwey neesi nda zeeribundu tam-tamante. A ma nee taalibey ma kuuyanoo har santimeetar ra. Alfagaa m'a hantum, a m'a har, a ma nee i ma har kaŋ kuuyanoo goo santimeetar 15 nda 16 game.

**Goy hinzantoo :**



Alfagaa ma nee taalibey ma laasaabu kuuyanoo kaŋ goo santimeetar 15 nda santimeetar 16 game.

A m'i cebe kaŋ kuuyanoo ga ti zamnari 10 kaŋ ga sawa. A ma nee kaŋ zamnari foo kul kuuyanoo ti milimeetar foo. Alfagaa ma nee taalibey ma milimeetar hinnaa kabu kaŋ goo santimeetar 1 ra.

I ma hantum : santimeetar 1 = milimeetar 10.

cm 1 = mm 10

Alfagaa ma nee taalibey ma milimeetar hinnaa kabu kaŋ goo santimeetar 1 ra, santimeetar 2 ra, 5, 6 ra.

Alfagaa ma nee taalibey ma hayayaŋ neesi, i ma ngi kuuyaney har milimeetar ra.

**Goy taacantoo :** Alfagaa ma nee taalibey ma berandey wey har, i m'i hantum daaroo ra :

\* hinna timmante : nombre entier

$m\ 1 = dm\ 10$   
 $dm\ 1 = cm\ 10$   
 $cm\ 1 = mm\ 10$   
 $m\ 1 = mm\ 1\ 000$

m	dm
1	0

dm	cm
1	0

cm	mm
1	0

Wala

m	dm	cm	mm
		1	0
	1	0	0
1	0	0	0

Nda boro ga baa ma hun kuuyan beene kabu-ize ga ka koy ganda wanoo kaɗ ga tuku a ga nda banda, ni mm'a taabu nda 10. Alfagaa ma nee taalibey ma woo laasaabu, i m'a dii ngi boɗey ra.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma wey berandi :

- dm 6 = cm ...
- cm 5 = mm ...
- dm 1 = mm ...
- dm 37 = m ... dm ...

**Goy idduwantoo :**

Kuuyaney wey timmandi sanda cm 10 = dm 1

- cm 100 = m ...
- dm 10 = m ...
- mm 25 = cm ...

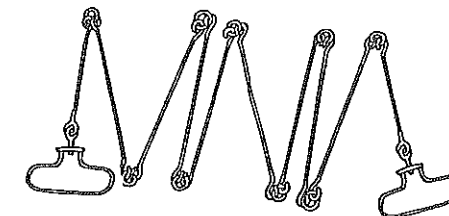
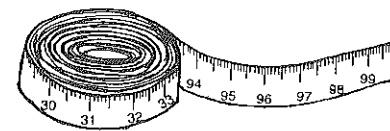
Nda boro ga baa ma hun kuuyan ganda kabu-ize ga ka koy beene wanoo kaɗ ga tuku a ga nda jine, ni mm'a zemni nda iwoy.

Alfagaa ma nee taalibey ma karfu kuku zaa i ma meetar mee 10 neesi a ra. A m'i laasaabandi kaɗ hinnaa kaɗ neesandi ti meetar 10 (iwoyboɗ foo meetar ra). Woo din se i ga nee dekammeetar (dam).

a m'a hantum :

dam 1 = m 10
--------------

Alfagaa ma meetar 10 cebkarfoo cebe taalibey se. A ma bayrandi i se kaɗ cebkarfu kunkunanta mo goo no kaɗ ti m 10, wala 20, wala 30, wala 50.



**Goy yaahantoo :**

Alfagaa ma taalibey tee kuray-kuray lokkol batumaa ra. A ma nee kuray jinaa ma guuru cebkarfu meetar woyaa ka neesa hala cee 10 ; kuray hinkantoo ma meetaroo ka neesa hala cee 100. I ma zaabey har, i m'i hantum.

$dam\ 10 = hm\ 1$   
 $m\ 100 = hm\ 1.$

Taalibey ma laasaabu kaɗ hm 10 ti km 1

Wala meetar 1 000 = km 1

km	hm	dam	m
1	0		
	1	0	
		1	0

Kuuyan kabu-izey wey ra : meetar, dekammeetar, hektomeetar, kilomeetar, desimeetar, santimeetar nda milimeetar, duu kabu-izey kaɗ ga bisa meetar. Kabu-izey din se i ga nee meetar beene taabarey.

			m			

### Goy yaggantoo :

Alfagaa ma nee taalibey ma meetar beene taabarey deedandi nda cere :

$$\text{km } 1 = \text{hm } 10$$

$$\text{hm } 1 = \text{dam } 10$$

$$\text{dam } 1 = \text{m } 10.$$

Alfagaa ma nee taalibey ma hm 1 nda km 1 berandi meetar ra nda tontonyan wala nda taabuyan.

$$\text{hm } 1 = \text{dam } 10$$

$$\text{hm } 1 = \text{m } 10 + \text{m } 10 + \text{m } 10 + \text{m } 10 \dots + \text{m } 10$$

$$\text{wala hm } 1 = 10 \times \text{m } 10 = \text{m } 100$$

$$\text{km } 1 = \text{hm } 10$$

$$\text{km } 1 = \text{dam } 100$$

$$\text{wala km } 1 = 100 \times \text{m } 10 = \text{m } 1\,000$$

### Denden

1. Daari tee ma hantum a ra :

cm 10 ; dm 20 ; mm 10 ; cm 35 ; mm 128.

2. Wey timmandi :

$$\text{cm } 40 = \text{dm } \dots$$

$$\text{cm } 600 = \text{m } \dots$$

$$\text{km } 1 = \text{hm } \dots$$

$$\text{hm } 94 = \text{dam } \dots$$

$$\text{dm } 38 = \text{m } \dots \text{dm } \dots$$

3. Daaroo berandi m'a timmandi :

dm 20	m 3	cm 25	dm 45	hm 100	km 20
mm...	cm...	mm...	m...dm...	dam...	hm...

4. Berandey wey tee :

$$\text{hm } 6 + \text{dam } 5 = \text{m } \dots$$

$$\text{km } 12 + \text{hm } 7 = \text{dam } \dots$$

$$\text{hm } 4 + \text{m } 400 = \text{dam } \dots$$

$$\text{hm } 5 - \text{m } 300 = \text{m } \dots$$

5. Ali na meetar 200 zuru, a na meetar 150 dira. Meetar marje no Ali n'a tee ? A hantum hektomeetar ra.

6. Goykaw foo hugoo nda nga goydogoo gamoo ga too km 23. Zaari kul a g'a dira cee 4. Kilomeetar marje no a g'a dira zaari ra ?

## Neesiri :

## Kaare nda muulubii wangari kuuyan\* bayray dunbo

**Taasiha :** Taaliboo ma hin :

- ka kaare nda muulubii wangari kuuyan bay ;
- ka kaare nda muulubii wangari kuuyan neesi ;
- ka kaare nda muulubii wangari kuuyan kabu.

**Kabu cahante :**

Ka kabu nda zenber-zenber.

Kabu nda zenber-zenber ka hun 1000 ka koy 9 000 ga.

**Goyjinawey :**

Walha, karfu, kaare kaɗ dunbandi karton ra, zeeribundu tam-tamante\*, ...

**Goyey**

**Goy jinaa :**

Alfagaa ma nee taalibi foo kul ma nga walhaa sanbu, a ma kaboo hangandi jeseɗ bande k'a wanga. Alfagaa ma nee i se kaɗ woo ti walhaa wangaroo.

Alfagaa ma goy follokaa tee nda kaare kaɗ dunbandi kaddasu ra.

**Goy hinkantoo :**

Alfagaa ma nee taalibi foo ma nga taabaloo wangaroo neesi, a ma kuuyanoo har. Alfagaa ma bangandi taalibey se kaɗ kuuyanoo dimmaa ti birowoo wangaroo.

Alfagaa ma kalimaa woo wangaroo kuuyanoo hantum walhabeeroo ga, a ma nee i m'a caw.

\* wangari : contour, pourtour

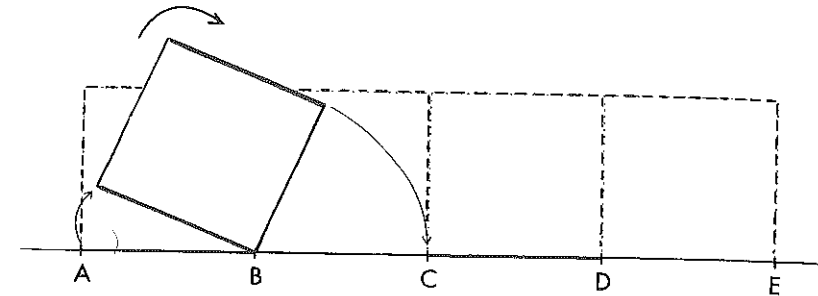
wangari kuuyan : périmètre

\* tam-tamante : gradué

**Goy hinzantoo :**

Alfagaa ma kaare foo tee walhabeeroo ga.

A ma nee taalibey ma cerawey neesi. Ceraw foo kul kuuyanoo i m'a bay. A m'i hãa wala ceraw marje no (= ceraw 4). I ma cerawey kuuyaney din tonton cere ga ka duu kaarewoo wangaroo kuuyanoo sanda :



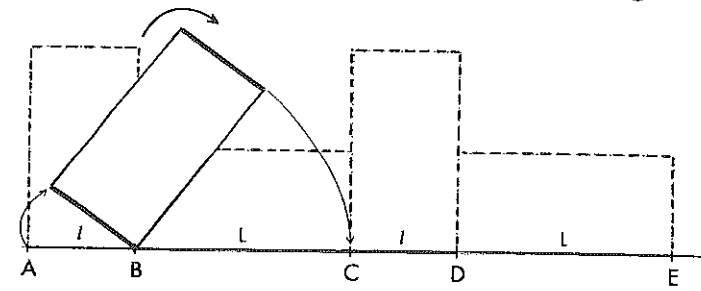
**Laasaabu :** Kaarewoo wangaroo kuuyanoo (kwk) ga sawa nda ceraw (c) taacaa kuuyanoo sanda :

$$K W K = c + c + c + c$$

Nda boro ga kaare wangaroo kuuyanoo ceeci, ni mma ceraw taacaa tonton cere ga.

**Denden :** Ir lokkol sardiɗaa, kaare no ; ceraw foo ga sawa nda m 110. Marje ti sardiɗaa wangaroo kuuyanoo ?

**Goy taacantoo :** Alfagaa ma zeeri serrante jere tee walhabeeroo ga, kaɗ ga sintin nda 0. A ma nee taalibi foo ma nga walhaa boɗ faa fur 0 ga, a ma walhaa bere-bere ceraw taacaa kul ga sanda :



Alfagaa ma taalibey bayrandi kaɗ ceraw taacaa (kuuyan, hayyan, kuuyan hayyan,) tontonyanoo cere ga ti wangaroo kuuyanoo.

Muulubii wangaroo kuuyanoo (mwk) ga sawa nda :

$$M W K = k + h + k + h$$

Alfagaa ma cebe taalibey se kaɗ muulubii kaɗ kuuyan foo nda hayyan foo ti wangaroo kuuyan jeroo ga hantumandi :

$$\text{Wangari kuuyan jeroo (wkj) = kuuyan + hayyan}$$

$$W K J = k + h$$

**Denden :**

Sunfi faari foo kuuyanoo ti m 25 ; nga hayyanoo ga sawa nda m 15. Marje ti nga wangari kuuyan jeroo ? Marje ti nga wangaroo kuuyanoo ?

**Denden :**

1. Faramkoyra woy foo sardiɗaa cerea ga sawa nda m 50. Aliyyu na sardiɗaa wanga cee 2. Meetar marje no Aliyyu n'a dira ?
2. Wey ti kaare wala muulubii cerawey kuuyaney. Daaroo timmandi.

cerawey kuuyanoo cm ra				
ceraw 1	ceraw 2	ceraw 3	ceraw 4	wangaroo kuuyanoo
15	15	15	15	...
18	12	18	12	...
16	14	...	...	...
20	...	...	...	80

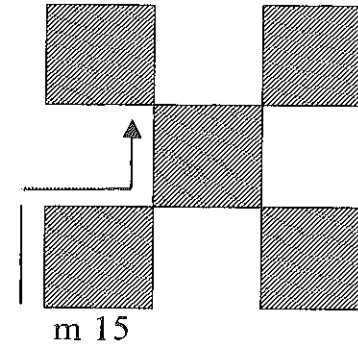
3. Daarey wey berandi m'i timmandi.

muulubii			
kuuyan	hayyan	wangari kuuyan jere	wangari kuuyan
5	3	...	....
8	...	14	...
15	...	...	42

kaare	
ceraw	wangari kuuyan
5	...
8	...
12	...
...	20

4. Biyoo woo guna ma zaabi :

- Abdu kaloo kaɗ goo Mbuuna kaare ceraw foo kul ti m 15. Duu kaare foo kul wangaroo kuuyanoo.
- Zaari foo kul, Abdu ga kaloo kul wanga cee foo. Meetar marje no a g'a dira cere ra ?



## Nooru : nooru guuru nda nooru fita

**Taasiha :** Taaliboo ma hin :

- ka nooru margari adadu bay, fita wala guuru ra ;
- ka nooru margariyaŋ tee, fita nda guuru ra kaŋ ga sawa nda adaduyaŋ ;
- ka nooru barmay ;
- ka barmay willi koyoo ga ;
- ka daymi adadu bay ;
- ka miseyaŋ tee nda nooru fita wala guuru.

**Kabu cahante :**

800 x 1000 ; 900 x 10 ; 75 x 100 ; 99 x 50 ; 59 x 20

**Goyjinawey :**

Nooru fita nda nooru guuru dumi boobo.

**Goyey**

**Goy jinaa :**

Alfagaa ma nooru guuru dumi boobo jisi taabal foo boŋ.  
Taalibey ma nooru guurey cebe ; i ga maapey har. I m'i deedandi  
ngi adadey nda ngi kunturey ga.

**Goy hinkantoo :**

Alfagaa ma nee taalibey ma kaatibi 2 wala kaatibi 10, wala k20,  
wala k50 cebe.

**Goy hinzantoo :**

Alfagaa ma k10 guuru cebe, a ma nee taalibey ma duu nga  
adadoo nda nooru guuru buuna.  
Alfagaa ma nooru guuru margari cebe, a ma nee taalibey ma guuru  
foo cebe kaŋ adadoo ga sawa nda margaroo wanoo.

**Goy taacantoo :**

Alfagaa ma nee taalibey ma k10 bar nda kaatibi hinka-hinka.  
Alfagaa ma nee taalibey ma kaatibi 20 barmay nda kaatibi guu-  
guu nda kaatibi hinka-hinka.  
Alfagaa ma nee nga taalibey ma kaatibi 20 (waranka) barmay nda  
iwoy-woy.  
Alfagaa ma nee taalibey ma kaatibi zangu fita, zangu hinka fita,  
zenber foo fita, cebe cere se.  
A m'i hãa. Taalibey ga maayey har nda affoo-foo.

**Goy guwantoo :**

Alfagaa ga nooru fita (zangu fita, zangu hinka fita, zenber foo fita,  
zenber hinka fita) cebe taalibey se.  
A m'i hãa. Taalibey ga maayey har nda affoo-foo.

**Goy idduwantoo :** Alfagaa ga zangu hinka fita cebe a ma nee  
taalibey ma duu nga adadoo nda nooru fita.

Alfagaa ma zenber fita cebe a ma nee taalibey ma duu nga adadoo  
nda nooru fitayaŋ.

Alfagaa ma nooru fita margari cebe a ma nee taalibey ma duu nga  
adadoo nda nooru fita foo.

Alfagaa ma woo da cine tee nda zenber fita nda zenber hinka fita.

**Goy iyyantoo :**

Alfagaa ma nee taalibey ma zangu fita barmay nda kaatibi 20 ;  
woo din bandaa ga a ma nee i m'a barmay nda k 50.

A ma nee i ma zangu hinka fita barmay nda fita nda guuru.

I ma zangu guu fita barmay nda fita nda guuru.

Taalibey ma takaa woo da tee nda zenber foo fita nda zenber hinka  
fita.

**Goy yaahantoo :**

Cawhugoo ra, alfagaa m'a ti sanda yoobu ra cawkey goo. Taalibi  
foo ga ti neerekaw, affoo ga ti daykaw.

Alfagaa ga neerekaa noo jinay dumi boobo sanda : kiryoŋ, bik,  
kayye, walha ; tuusiji ; zeeribundu, kanje-gorante zeeriji...

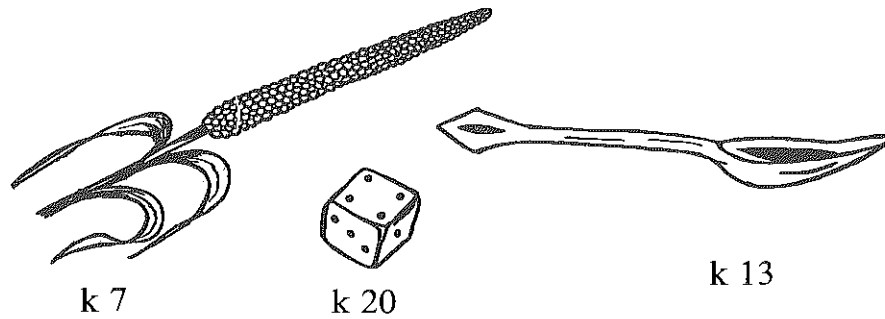
Alfagaa ma daykaa noo kaatibi 20, a ma koy bik day kañ hayoo ti k15. Neerekaa ga nga barmaa yeeri a ga.

### Bonhaw

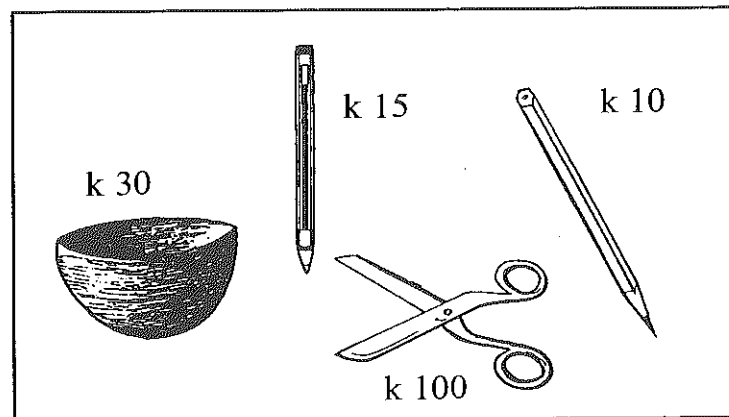
- Ummu Baanikan na zeeribundu day k15. A na neerekaa noo k50 guuru foo. Marje ti nga barmaa ?
- Sidi na walha foo day k150. A filla ka kayye foo day k45. A na neerekaa noo k200. Marje ti nga barmaa ?
- Dibi na dooru bata foo day 550. A na neerekaa noo k 1000 fita. Marje ti nga barmaa ?
- Faati goo nda k40. A ga baa kayye foo kañ hayoo ti 45. A ga hin ka duu kayyewoo wala? Macin se ?
- Taatu duu k200 tur ra, a ga baa kabubayray kitaabu foo kañ ti k300. A ga hin ka duu a wala ? Macin se ?

### Denden

1. K 20 ra, jinay foo no ni ga hin k'a day wey ra ?



2. K 100 ra, jinay foo no ni ga hin k'a day ?



3. Daaroo timmandi.

jinay	hay	dimma kañ noondi	barmaa
tuusuji	k 40	k.....	k 10
zeeribundu	k 45	k 100	k .....
dooru	k 15	.....	k 10
kayye	k....	k 100	k 20

### Bonhaw

1. Suwoy na k130 tamaati day. A na neerekaa noo k200. Marje ti nga barmaa ?



2. Aziz goo nda k250, Summa n'a noo k120. A ga baa nga ma darbay day kañ hayoo ti k400. Marje ma Aziz kuma ?
3. Muusa na Fanta noo k300. A ga baa leemurba ize 60. Leemurba ize foo kul ti k10. Muusa ga hin ka duu leemurba ize 60 wala ? Macin se ?
4. Aysata na basan meetar 10 day. Meetar foo kul ti k150. A na neerakaa noo k 2000. Marje ti nga barmaa ?

## Kuntur / tiŋay

### Waafakay tiŋay neesirey : garam beene taabarey nda ganda taabarey ; berandiyan

**Taasiha :** Taaliboo ma hin :

- ka tiŋayyan deedandi nda tiŋay neesiji ;
- ka jinayyan tiŋaa bay nda tiŋay neesirey (i ma tee alaada wala waafakay neesirey): kilogaram, kilogaram jere, hektogaram, dekgaram, garam, mutukal ;
- ka tiŋay kabu-izey berandi.

**Kabu cahante :** Wey taabu

12 x 10 ; 23 x 30  
28 x 100 ; 55 x 40  
58 x 20 ; 19 x 50.

**Goyjinawey :**

Tiŋay neesiji (balansi), tiŋay neesirey, jinayyan kaŋ ga neesa...

**Goyey**

**Goy jinaa :**

Alfagaa ma jinay hinka zaa kaŋ tiŋawey ga hanse ka mooru cere. A m'i dam taalibi foo kanbey ra, taaliboo ma ngi tiŋaa laasaabu. Taalibey m'i noo cerey se, i m'i bere-bere cere kanbe ra. Alfagaa m'i hãa « Jinay hinkaa ra, affoo ka tiŋ nda ceroo » ? Taalibey ma dii kaŋ affaa tiŋ nd'affaa.

Alfagaa ma yee ka jinay hinka tana zaa kaŋ tiŋay hinkaa gamey si hanse ka laasaabandi. A m'i dam taalibey kanbey ra, ngi mo ma yee k'i bere-bere cere kanbe ra. A m'i hãa wala affoo ka tiŋ nd'affoo. Taalibey ga cere kakaw tiŋawey ga.

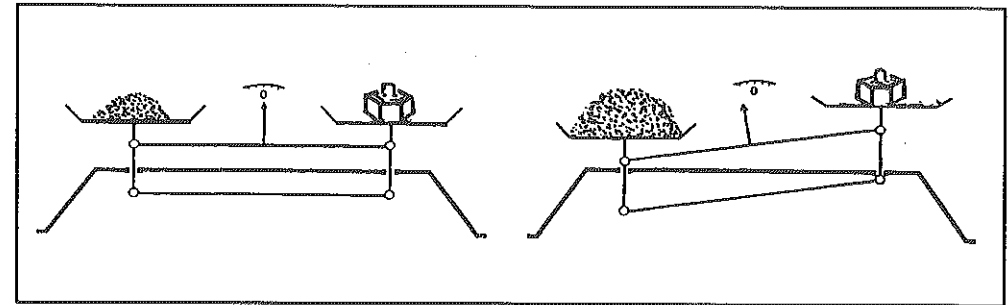
Woo din banda ga, alfagaa ma nee i se, jinay foo goo no kaŋ ga tiŋawey kaa cere ra, ba tiŋawey si maatandi, kaŋ se i ga nee tiŋay neesiji.

Alfagaa ga tiŋay neesijoo cebe taalibey se, a ma takaa fahamandi i se kaŋ nda boro g'a ka goy.

**Goy hinkantoo :**

Alfagaa ma daw kaŋ bisa kilo foo, dam tiŋay neesijoo jinay foo ra, a ma kilogaram foo tondi neesiroo cebe taalibey se, a m'a jisi tiŋay neesijoo jinay hinkantoo ra.

I ga kaa dawoo ra nda kayna-kayna hala hayey tiŋaa ma sawa. I ma nee dawoo tiŋaa ti kilogaram foo.



**Goy hinzantoo :**

Taalibey ma jinay dumi-dumiyan zaa. I m'i neesi nda balansoo nda ihinka-hinka.

I ma laasaabu wala ngi tiŋawey ga sawa.

**Goy taacantoo :**

Alfagaa ma kilogaram jere tondi neesiroo nda garam 500 cebe taalibey se.

I ga kilo jere tondi neesiroo dam tiŋay neesiroo jinay jinaa ra, i ma garam 500 tondoo dam jinay hinkantoo ra.

I ga laasaabu kaŋ i ga sawa tiŋay.

Taalibey ma faham kaŋ kilogaram jere da ti garam 500.

**Goy guwantoo :**

Taalibey ma filla ka daw kilo foo neesi. I ma kilogaramoo kaa, i ma garam 500 hinka dam dogoo ra.



I ma nee garam 500 cee hinka ti kilogaram 1.

Alfagaa ma nee taalibey ma garam 100 daw neesi. A ma nee i se « Woo ti hektogaram foo ». I m'a hantum, i m'a caw.

Taalibey ga filla ka garam 10 daw neesi, a ma nee « Garam 10 wala dekgaram foo ». I m'a caw, i m'a hantum. Alfagaa ma nee taalibey se : « Garam (g) ti tijay neesirey linjoo. Nga beene taabarey ti dekgaram (dag), hektogaram (hg) nda, kilogaram (kg) ».

Alfagaa ma daaroo tee.

Alfagaa ga kate taalibey ma bay kanj garam kaccu nda dekgaram, dekgaram kaccu nda hektogaram kanj mo kaccu nda kilogaram.

kg	hg	dag	g
1	0		
	1	0	
		1	0
1	0	0	0

Affoo hul bisa ceroo cee 10

$$\text{kg } 1 = \text{hg } 10$$

$$\text{hg } 1 = \text{dag } 10$$

$$\text{dag } 1 = \text{g } 10$$

$$\text{kg } 1 = \text{g } 1000$$

### Goy idduwantoo :

- Wey tee  
hg 8 = g ? kg 4 = dg ? dag 12 = g ?
- Wey dam daaroo ra : g 237 ; dag 76 ; hg 93.

### Goy iyyantoo :

Alfagaa ma taalibey bayrandi kanj nda garam foo zamnandi cee woy, zamnari foo kul ti desigaram foo ; i m'a caw, i m'a hantum.

Nda desigaram zamna cee woy, zamnari foo kul ti santigaram (cg), i m'a caw, i m'a hantum. Nda santigaram zamna cee woy, zamnari foo kul miligaram (mg). I m'a caw, i m'a hantum.

Taalibey ma bay kanj desigaram kaccu nga garam ; santigaram kaccu nda desigaram, miligaram mo kaccu nda santigaram. Affoo kul bisa ceroo cee 10.

$$\text{g } 1 = \text{dg } 10$$

$$\text{dg } 1 = \text{cg } 10$$

$$\text{cg } 1 = \text{mg } 10$$

Alfagaa ma nee taalibey se : desigaram (dg), santigaram (cg) nda miligaram (mg) ti garam (g) ganda taabarey.

### Goy yaahantoo :

Alfagaa ma kate taalibey ma garam ganda taabarey daaroo tee.

lingoo	ganda taabarey		
	dg	cg	mg
g			
1	0		
	1	0	
		1	0
1	0	0	0

$$\text{g } 1 = \text{dg } 10$$

$$\text{dg } 1 = \text{cg } 10$$

$$\text{cg } 1 = \text{mg } 10$$

$$\text{g } 1 = \text{mg } 1000$$

### Goy yaggantoo : Wey tee

- g 12 = dg ... ; cg 842 = mg ... ; dg 24 = g ... dg ... ;  
mg 9 899 = g ... dg ... cg ... mg ...

- Wey dam daaroo ra : dg 76 ; mg 6 764 ; cg 832 ; mg 17

### Denden :

Wey tee :

1. g 27 = dg ... cg 521 = dg ... cg ...  
cg 346 = g ... dg ... cg ...  
dg 12 = mg ... cg 830 = g ... dg ... cg ...  
cg 993 = dg ... cg ...

2. Wey dam daaroo ra.

cg 623	cg 520	cg 842	dg 36
dg 57	dg 26	cg 999	cg 15

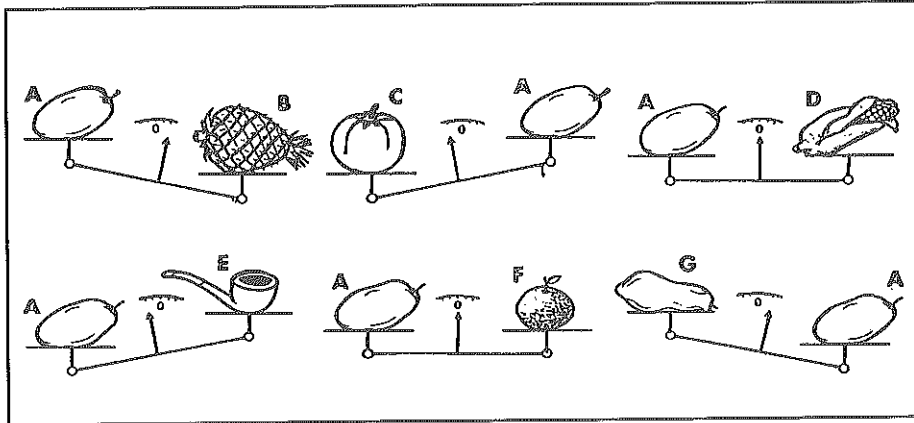
3. Wey bere m'i timmandi

g 6 + g 3 = dg ...	dg 23 + dg 31 = mg ...
cg 12 + cg 21 = mg ...	dg 57 - dg 30 = mg ...

### Bonhaw

1. Konna yooboo hane Dawda na tamaati kg 15 nda karooti kg 6 nda moli kg 70 kaa nga saddinjaa ra. Kilo marje dumaray no Dawda kaa ?

2. Yurmi maamalakaw foo na fita adaka 27 day. Adaka foo kul fita kg 10 goo a ra. Fita kilo marje no maamalakaa se ?
3. Ŋaari kg 973 goo Saafi mangasaa ra. A na kg 450 neere, a na kilo 150 gaa. Ŋaari kilogaram marje ka cindi Saafi mangasaa ra ?
4. Balansey wey guna, daaroo berandi, m'a timmandi.



jinnawey kaŋ tiŋ nda A	jinawey kaŋ felaw nda A	jinawey kaŋ nda A ga sawa
.....	.....	.....

42

## Tooyan\*

### Waafakay tooyan neesirey (liitar beene taabarey nda ganda taabarey) berandiyan\*

**Taasiha :** Taaliboo ma hin :

- ka waafakay neesirey (beene taabarey nda ganda taabarey : liitar, dekaliitar, hekto liitar desiliitar, santiliitar, mililiitar) bay ;
- ka waafakay neesijey ka goy (l, 1 ½ , 1 ¼, dal) ;
- ka hinna berandi waafakay tooyan kabu-izey ra.

**Kabu cahante :**

- Muusa goo nda k150, baaboo n'a faaba nda k140. Marje bara a se ?
- Arham kilaasi 4 duu kalam 50, lokkol jinehunoo n'i faaba nda kalam 27. Kalam marje n'i duu ?
- Hawwa goo nda hayni poti 87, kurŋoo mo kate poti 95. Hayni poti marje no Hawwa duu ?

**Goyjinawey :**

Jinay kaŋ ga sawa nda liitar foo, liitar jere, liitar zamna taaci (arrubu\*), liitar woy dumi boobo.

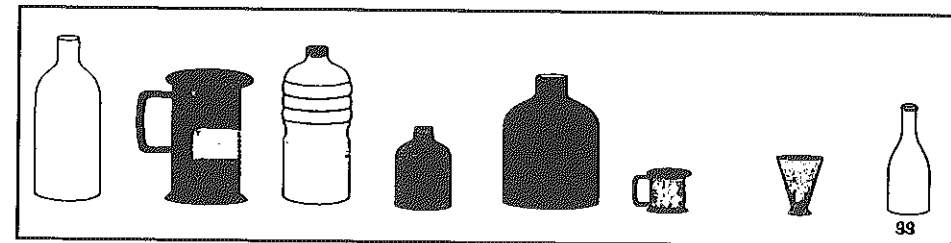
Jinay beeri hinka kaŋ ra hari goo.

**Goyey**

**Goy jinaa :**

Alfagaa ma jinawey cebe taalibey se :

l, 1 ½ , dal, 1 ¼, jinay beerey.



\* toyan : capacité  $\neq$  tonay : volume  
 \* berandi = barmay : convertir  
 \* arrubu : ¼ l

Alfagaa ma nee taalibey ma liitar dumi-dumiyaŋ zaa, i ma ng'i tooyaney deedandi, ka duu ka cebe kaŋ ba kaŋ ngi alhaaley si hima, ngi tooyaney ga sawa (liitar foo).

**Goy hinkantoo :**

Alfagaa ma nee taalibey ma liitar foo bidonj too nda liitar jere. I ma bay kaŋ liitar jere hinka ka liitar foo bidonjoo too. Taalibey ma hantum : liitar jere (1 ½) , i m'a caw.

**Goy hinzantoo :**

Goy follokaa ma tee nda 1<sup>1/4</sup>. I ma liitar foo jinay too nda liitar zamnari taacantoo. Cee taaci no i ga liitar zamnari taacantoo dam liitaroo ra. I ma nee **liitaroo** nga ti tooyan neesirey **linjoo**. Taalibey ma hayayaŋ har kaŋ i g'i neesi nda liitar. I ma hantum : liitar zamnari taacantoo (1 1/4), i m'a caw.

**Goy taacantoo :**

Goy follokaa ma tee liitaroo nda desiliitaroo gamoo ra. Alfagaa ma kate taalibey ma bay kaŋ liitar ga sawa nda desiliitar 10. Goy follokaa ma tee nda desiliitar nda santiliitar gamoo ra, santiliitar nda mililiitar gamoo ra.

- 1 1 = dl 10
- dl 1 = cl 10
- cl 1 = ml 10

Alfagaa ma nee taalibey ma jinawey suuba kaŋ ga kaccu nda liitaroo ; i ma wey kaŋ kaccu nda liitaroo har. I ma wey kaŋ ga kaccu nda cere nda iwoy-woy har. Wey se ir ga nee **liitaroo** ganda taabarey : desiliitar (dl) santiliitar (cl) mililiitar (ml). Alfagaa ma kate taalibey ma liitar ganda taabarey daaroo tee.

- 1 1 = dl 10
- dl 1 = cl 10
- cl 1 = ml 10
- 1 1 = cl 100
- 1 1 = ml 1000

linjoo	ganda taabarey		
	dl	cl	ml
1	0		
	1	0	
		1	0
1	0	0	
1	0	0	0

**Goy guwantoo :** Wey berandi.

- 1 84 = cl ... ; cl 900 = 1 ... ; cl 420 = dl ... cl ... ; cl 100 = 1....
- Wey dam daaroo ra : cl 743 ; ml 1 250 ; cl 101 ; ml 56 ;

**Goy idduwantoo :**

Alfagaa ma jinawey wey cebe taalibey se : 1 1 ; 1 10 ; 1 100 ; 1 200.

Alfagaa ma nee taalibey ma liitar 10 jinay too nda 1 1. I ma bay kaŋ 1 1 mee 10 ka 1 10 jinaa too.

I ma hantum liitar 10 wala dekaliitar foo.

I m'a caw : 1 dal = 1 10 .

Alfagaa ma nee taalibey ma jinay kaŋ ga too 1 100 too nda dal 1.

I ma bay kaŋ dal 10 k'a too. I m'a hantum, i m'a caw.

dekaliitar 10 ti hektoliitar 1 ; dal 10 = hl 1.

Alfagaa ma nee taalibey ma neesirey har kaŋ bisa liitaroo : dekaliitar (dal) nda hektoliitar (hl).

I ma wey kaŋ kaccu nda cere nda iwoy woy har.

Wey se i ga nee **liitar beene taabarey** : dekaliitar nda hektoliitar.

Alfagaa ma kate taalibey ma liitar beene taabarey daaroo tee.

- dal 1 = 1 10
- hl 1 = dal 10
- hl 1 = 1 100

beene taabarey daaroo		
hl	dal	1
1	0	
	1	0
1	0	0

## Goy iyyantoo :

### Wey berandi

- 1 200 = dal ... ; dal 38 = hl ... dal... ; 1 108 = hl ... dal... l ...

### Wey dam daaroo ra.

- 1 145 ; 175 ; hl 5 ; dal 27 ; hl 2 13

## Denden

### Wey berandi

- |                  |                        |
|------------------|------------------------|
| 1. 1 84 = dl ... | cl 420 = dl ... cl ... |
| cl 100 = dl ...  | cl 100 = l ...         |
| cl 900 =         | cl 900 = l...          |

### 2. Wey dam daaroo ra

- |        |        |        |       |
|--------|--------|--------|-------|
| cl 743 | cl 370 | cl 488 | dl 42 |
| dl 30  | cl 101 | cl 990 | cl 56 |

### 3. Wey bere m'i timmandi

- |                        |                   |
|------------------------|-------------------|
| 1 15 + 15 = dl ...     | 1 32 x 2 = cl ... |
| dl 28 - dl 13 = cl ... | dl 25 x 4 = l.... |

### 4. Wey hantum daaroo ra

- |       |        |                |         |
|-------|--------|----------------|---------|
| 1 145 | hl 5   | 1 335          | 1 210   |
| 1 408 | 1 908  | dal 49         | dal 10  |
| 1 75  | dal 27 | hl 2 dal 3 1 7 | hl 2 13 |

### 5. Wey timmandi

- |                          |                       |
|--------------------------|-----------------------|
| 1 200 = dal ... l ...    | hl 1 = dal ... l ...  |
| dal 280 = hl ... dal ... | hl 15 = dal ... l ... |
| hl ... = dal 350         | dal 19 = l ...        |
|                          | l... = dal 41         |

### 6. Wey timmandi (ni boŋ faaba nda daaroo)

- |                               |                              |
|-------------------------------|------------------------------|
| 1 455 = hl ... dal ... l ...  | 1 105 = dal ... l ...        |
| dal 38 = hl ... dal ... l ... | dal 9 = hl ... dal ... l ... |
| 1 15 = hl... dal ... l ...    | 1 108 = hl ... dal ... l ... |

## Gayyan : han bayyan, ler (guuru) cawyan

### Taasiha : Taaliboo ma hin :

- ka waatoo bay kaŋ ra nga goo, waatey bay kaŋ ra miseyaŋ tee ;
- ka miseyaŋ kaŋ tee haney bay kalandiriye ra ;
- ka yooboo\* (jirbiyyaa) zaarey nda jiiroo handey maayey har cere bande ;
- ka waatoo kabu-izey (ler, miniti) bay ;
- ka ler caw montar ga.

### Kabu cahante :

$$5 \times 1 = ; 5 \times 5 = ; 5 \times 8 = ; 5 \times 10 =$$

**Goyjinawey :** kanbe montar\*, tunandi montar\* garu montar\*, kalandiriye.

### Goyey

### Goy jinaa :

Alfagaa ma taalibey hãa nda goyey kaŋ i n'i tee hugey do subbaahoo za i mana kaa lokkol.

### Goy hinkantoo :

Alfagaa ma nee taalibey ma hanoo har kaŋ ra lokkol feera ; hanoo kaŋ ra Maali duu nga borcintaraa ; zaaroo kaŋ ra cibsi jingaroo tee jiiroo. Taalibey ma zaabey noo.

Taalibey ma har alfagaa bande :

« Yoobu foo jirbey ti : atinni, attalaata, alarba, alhamiisa, alzuma, asipti, alhadi ».

« Jiiri handey ti : žanwiye, fewiriye, marsi, awril, me, žuwej žuyye, ut, sektanbur, oktoobur, nowanbur, desanbur ».

\* yoobu : jirbiyye = semaine  
 \* kanbe montar : montre bracelet  
 \* tunandi montar : (montre) réveil  
 \* garu montar : horloge

### Goy hinzantoo :

Alfagaa ma taalibey zamna kurayyan, a ma kuray foo kul noo kalandiriye foo.

Alfagaa ma nee taalibey ma zaarey caw kalandiriye ga, i ma ngi hinnaa nda ngi hanga-hanga-cereyanoo har jirbiyyaa ra. I ma handey mo maayey caw, i ma ngi hanga-hanga-cereyanoo har jiiroo ra.

Taalibey ma laasaabu kan jirbi iyye ti yoobu foo ; kan jirbi 28 wala 29, wala 30, wala 31 ma bara handu ra.

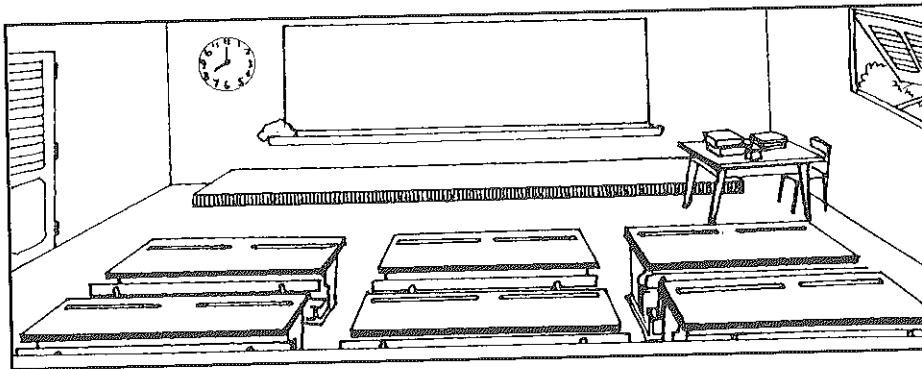
Taalibey ma laasaabu mo kan handu 12 bara jiiri ra.

Taalibey ma yoobu (jirbiyye) hinnaa kabu kan goo jiiri ra (yoobu 52).

Taalibey ma jirbi 30 handey bay, i ma jirbi 31 waney mo bay.

Taalibey ma laasaabu kan Feewiriye handoo bara nda jirbi 28 wala 29.

### Goy taccantoo :



Alfagaa ma taalibey haa nda leeroo kan ga lokkol ga huru subbaahi, nda leeroo kan ga a ga zunbu ; leeroo kan ga i ga hunanzam ; nda ler tanayan sanda : aluula jingar leeroo, tele feerayanoo leeroo alhadoo hane,...

### Goy guwantoo :

Alfagaa ma taalibey haa : « Macin ga boro ga ler bay ? »

### Goy idduwantoo :

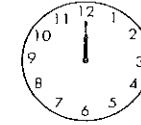
- Bii jinaa kan ti Ali lokkol subbaahi koyyan waatoo ga, alfagaa ma haa : « Ler foo ma bara ? »



- Bii hinkantoo kan ti fatta-ka-hoorayyan waatoo ga, ler foo ma bara ?



- Bii hinzantoo kan ti lokkol zaarikay zunbuyan waatoo ga, ler foo ma bara?



- Bii taacantoo kan ti lokkol wiciri koyyan waatoo ga, ler foo bara ?



- Bii guwantoo kan ti lokkol wiciri zunbuyan waatoo ga, ler foo ma bara ?



- Alfagaa ma taalibey cawandi ler, montar ga.

### Goy iyyantoo :

Alfagaa ma leryan har, taalibey m'i dam ka boori montar ga.

### Goy yaahantoo :

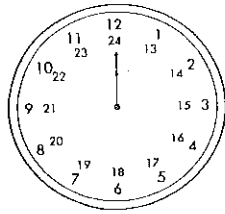
Taalibey ma laasaabu kan :

- nda sana beeroo na kaadaranoo (sakujoo) wanga ka timme cee foo kul, ikaccaa mma ler foo dira (12 nda 1 game) ;
- waati kul kan sana beeroo na wangari timmante tee kul ikaccaa mma ler foo tee ;
- hinna hinka kan ga hanga cere kul zamnari guu ma bara gamey ra. Zamnari foo kul ti miniti foo.

### Goy yaggantoo :

Alfagaa ma taalibey cawandi subbaahi ler timmanteyan (hala ler 12 ga).

Taalibey ma laasaabu kan nda zaarikay bisa, ler foo kul boro mma 12 tonton a ga k'a har sanda :



**Denden**

1. Zanwiye ti jiiroo handu jinaa. Affoo ti handu guwantoo ? Iwoyantoo ? Iwoy cindi hinkantoo ?
2. Jiiri 1993 ra, žanwiye jirbi jinaa sawa nda alzumaa. Duu haney kañ nda žanwiye follokaa alzumawey ga sawa.
3. Kalandiriyaa guna ma hanoo har kañ ra misey wey affoo kul tee.

ir gandaa borcintaraa	nowel jingaroo	jiiri bere jingaroo
jingaroo		

4. Bintu nda Fatti nda Adama kul hayandi jiiri foo : Bintu hayandi Oktoobur handoo ra, Fatti hayandi Fewiriye ra, Adama hayandi Zuweñ ra.  
May ka zen i kul ? May ti ngi kul kaynoo ?  
Zanka hinzaa maayey hantum ka hun woo kañ zen i kul ka koy woo ga kañ t'i kul kaynoo.

5. Leeroo har kañ goo montarey wey affoo kul ga :



subbaahi



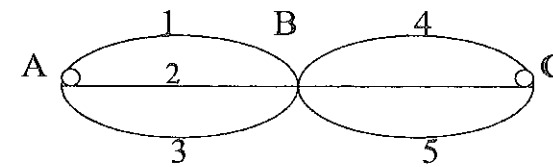
wiciri



6. Montar bii foo tee ma ler foo tabatandi, m'a hantum a ga.

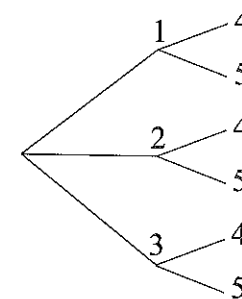
**Leesoñ 23 boñhawey boñfeeraa**

**Boñhaw 1<sup>naa</sup> boñfeeraa**



Fondawey kañ ga hima  
A ka koy C ga :  
1 - 4 ; 1 - 5 ; 2 - 4 ; 2 - 5  
3 - 4 ; 3 - 5.  
Fondo 6 bara

**Tuuroo**



$A = \{ 1 ; 2 ; 3 \}$        $B = \{ 4 ; 5 \}$

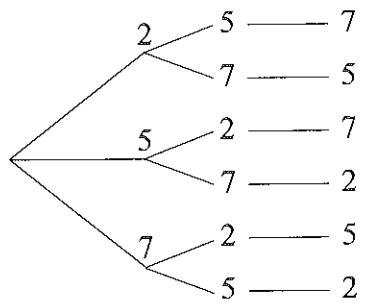
**Daaroo**

	4	5
1	X	X
2	X	X
3	X	X

Fondawey kañ ga hin ka tee : Kard  $A \times B = 6$

**Boñhaw 2<sup>ntoo</sup> boñfeeraa**

- a. Hinnawey nda 2 nda 5 : 25 ; 52
- b. Tuuroo : Nda kabu-ize hinza no



Daaroo

2	5
5	2

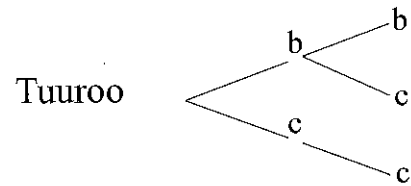
Maa seseroo :  
752 ; 725 ; 527 ;  
572 ; 275 ; 257.

Daaroo

c	d	u
7	5	2
7	2	5
5	7	2
5	2	7
2	7	5
2	5	7

### Bonhaw 3<sup>ntoo</sup> bonfeeraa

Ir ma kalam bula ti b, kalam ciray ma ti c bb, cc, bc.



Noonay hinza (3) no a ga hin ka ti a

Daaroo

b	b
c	c
c	b

### Bonhaw 4<sup>ntoo</sup> bonfeeraa

Tikewey kañ ga duu ga sawa nda walhawey hinnaa.

Tikewey kañ ga duu ti =

18 ; 28 ; 38 ; 48 ; 58 ; 68 ; 78 ; 88 ; 98. Walha 9 no ma noondi.

Kitaabey kañ ga noondi hinnaa ga sawa nda tikewey kañ ga duu.

Tikewey kañ ga duu =

40 ; 41 ; 42 ; 43 ; 44 ; 45 ; 46 ; 47 ; 48 ; 49.

Kitaabu 10 no ma noondi.

Tikewoo kañ ti 48 no ma duu walha foo nda kitaabu foo.

### Bonhaw 5<sup>ntoo</sup> bonfeeraa

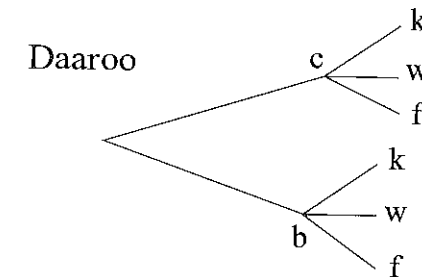
Daaroo

forkiyey siibey	k	w	f
c	x	x	x
b	x	x	x

Ir ma nee kañ forkiya kaarawey ti k, iwoolawey ti w, ifirzey ti f.

Ir ma nee kañ siibi hinkaa (2) ti c nda b.

Mise 6 nda Umar ga hin ka bankaaray.



Maa seseroo :

c k ; cw ; cf

b k ; bw ; bf.

$A = \{k ; w ; f\}$

$B = \{c ; b\}$

Mise 6 bara no kaŋ nda Umar ga nga boŋ bankaaray.

**Boŋhaw 6<sup>ntoo</sup> boŋfeeraa**

Ir ma nee kaŋ H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub> ti hondiyaw hinzaa ; A<sub>1</sub>, A<sub>2</sub>, A<sub>3</sub> ti arwasu hinzaa.

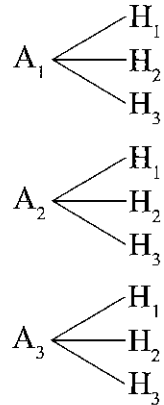
a. Cee hinnaa kaŋ ra i ga cere foo.

A<sub>1</sub> ga H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub> foo = cee 3

A<sub>2</sub> ga H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub> foo = cee 3

A<sub>3</sub> ga H<sub>1</sub>, H<sub>2</sub>, H<sub>3</sub> foo = cee 3

Hondiyawey nda ga arwasey ga cere foo cee 9.



b. Hondiya foo kul ga arwasu hinza nda hondiya hinka noo kabe ; arwasu foo kul ga hondiya hinza nda arwasu hinka noo kabe. Cee hinnaa kaŋ ra i ga cere foo :

Maa seseroo : H<sub>1</sub> H<sub>2</sub> ; H<sub>1</sub> H<sub>3</sub> ; H<sub>2</sub> H<sub>3</sub> ; A<sub>1</sub> A<sub>2</sub> ; A<sub>1</sub> A<sub>3</sub> ; A<sub>2</sub> A<sub>3</sub> ;

H<sub>1</sub> A<sub>1</sub> ;

H<sub>1</sub> A<sub>2</sub> ; H<sub>1</sub> A<sub>3</sub> ; H<sub>2</sub> A<sub>1</sub> ; H<sub>2</sub> A<sub>2</sub> ; H<sub>2</sub> A<sub>3</sub> ; H<sub>3</sub> A<sub>1</sub> ; H<sub>3</sub> A<sub>2</sub> ; H<sub>3</sub> A<sub>3</sub>.

I ga cere foo cee 15.

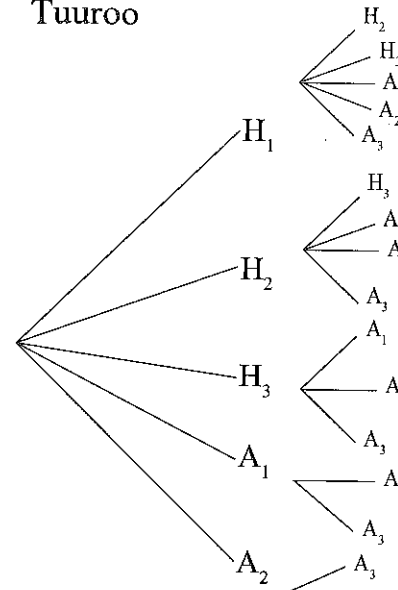
daaroo

	H <sub>1</sub>	H <sub>2</sub>	H <sub>3</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>
H <sub>1</sub>		X	X	X	X	X
H <sub>2</sub>			X	X	X	X
H <sub>3</sub>				X	X	X
A <sub>1</sub>					X	X
A <sub>2</sub>						X
A <sub>3</sub>						

I ga cere foo cee 15

I na cere foo cee 15

Tuuroo



$$\text{maabi}^* : A = \{H_1 ; H_2 ; H_3 ; A_1 ; A_2 ; A_3\}$$

$$\text{kard}^* \frac{A^2 - 6}{2} = 15$$

I ga cere foo cee 15

\* Kardinal (kard) = cardinal (card)

\* maabi = formule



## KALIMA SENDEY

arrubu: liitar zamna taacantoo = quart de litre  
baynsa : piisi = pièce de tissu  
berandi : barmay = convertir  
boŋ dobukaw = diagonale  
caraw gande = surface latérale  
cebkarfu = chaîne d'arpenteur  
cufu : cansa = vacciner  
doobarmay = commutativité  
fakkas (ka zamna) : haŋa nda hilli  
garu montar = horloge  
guuru guli = bille d'acier  
haŋaw = flèche  
hayey : miŋey  
hinna goyjinawey = matériel de numération  
hinna timmante = nombre entier  
kaadar : sakuji = cadre, encadrement, cadran  
kardinal (kard) = cardinal (card)  
maabi : maakunkuni = formule  
marakasinayyan = associativité  
moo = face  
nkuway : kanbawaawa = opposition, adversaire  
sasawandiyar : kar cere ga, kar ka sawa  
takari : alhaali = forme  
tam-tamandi = gradué  
tetteyanoo : sintinoo, dendenyanoo = approche, initiation  
tonbi-tonbante = pointillé  
toonay = volume  
tooyan = capacité  
tunandi montar = (montre) réveil  
wangari = contour, pourtour  
wangari kuuyan = périmètre  
yoobu : jirbiyye = semaine.

## Tiirawey kaŋ gunandi

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- Les mathématiques du CM2. Editel 1994
- Collection Cinq sur cinq Math 6<sup>ème</sup>. Hachette 1994.

Cawandi Ministeroo

M.E.N - C.N.E  
BAMAKO

Mali Gandaa

Jama foo - Anniya foo - Addin foo

# Kabubayray

## Jiiri hinzantoo

3

