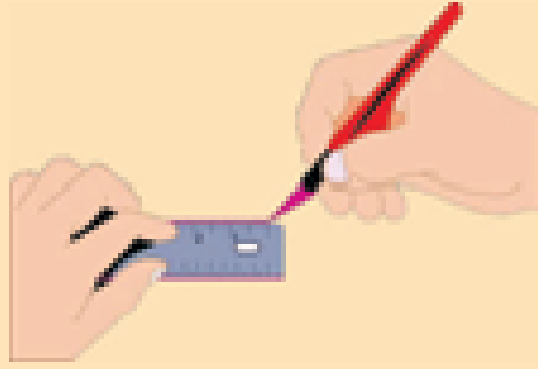


Boqonnaa

6



SARAROOTAA FI DANAALEE SASSALPHOO

6.1 SARAROOTAA WALQAXXAAMURAN, WALTARREE FI PARPANDIIKULARII TA'AN.

Waraqaa adii tokko fudhuutii sirriitti eeggachuudhaan walitti dachaasi. Ammas irra deebi'iitii akkuma sanatti walitti dachaasi.

- Waraqaa walitti dachaafte sana otuu hin diigin lafti inni itti walitti dacha'e maal akka fakkaatu tilmaami.
- Waraqaa walitti dachaafte sana erga diigdee booda lafa dacha isaa irratti sarara sarari (fakkeessi).

Tilmaamni kee sirrii turee?

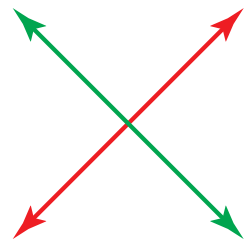
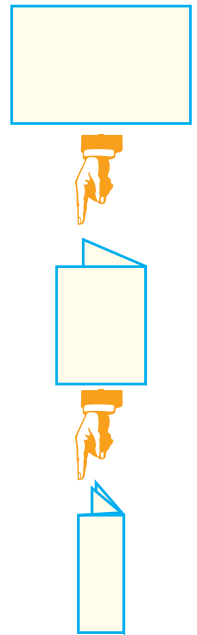
Sarara sararte lama wal bira qabiiti ilaali. Sararri lachuu kan argaman fageenya wal qixa ta'erratti.

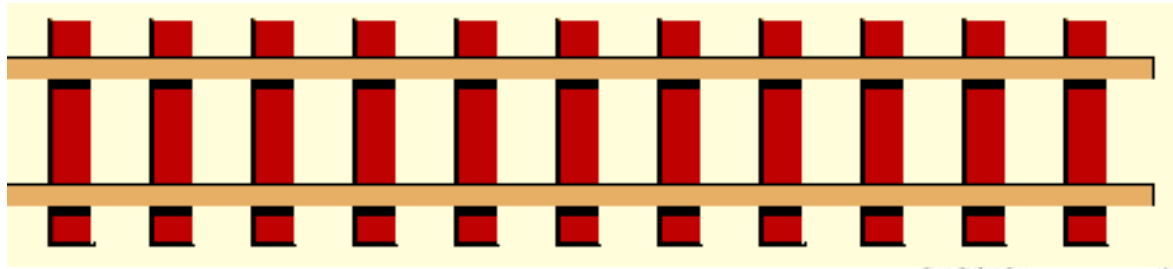
Sararoonni kun sararoota wal tarree jedhamu.

Sararoonni waltarreen fageenya walqixa ta'erratti kan argaman yommuu ta'an tuqaa irratti waltuqan tokkolee hin qaban.

Sararoonni wal qaxxaamuruu hin dandeenye yookaan tuqaa walini hin qabne sararoota wal tarree jedhamu.

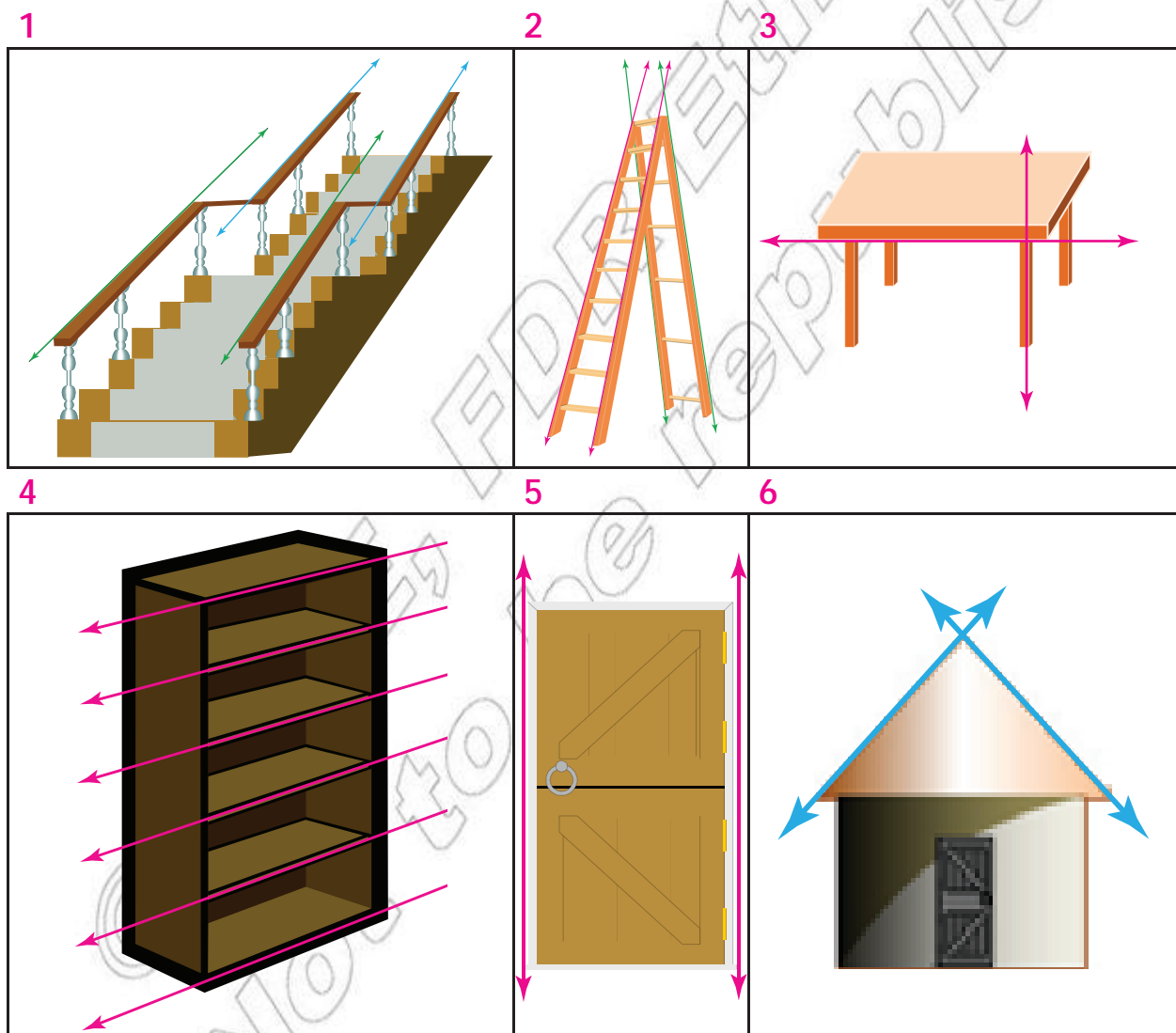
Sararoonni wal qaxxaamuran immoo tuqaa irratti wal tuqan tokko warra qabaniidha. Sararoonni kun sararoota walqaxxaamuroo yookaan walkiphan jedhamu.





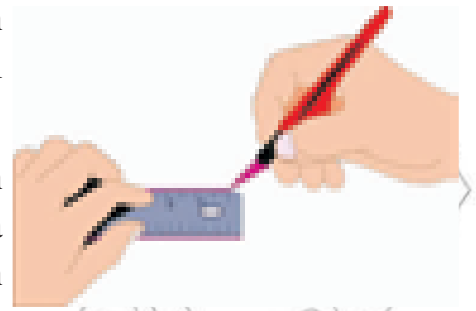
Gocha 1

Danaawwan kennaman erga ilaaltanii booda sararoonni kennaman waltarree yookaan kan wal qaxxaamuran ta'uu isaanii cimdii cimdiin ta'uudhaan waliin mari' adhaatii deebisaa.



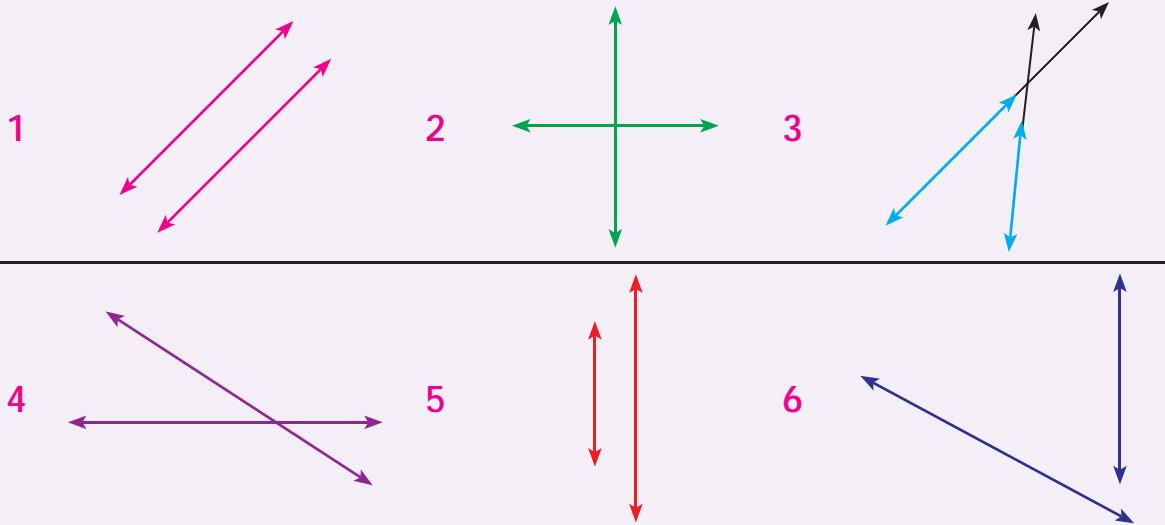
Gocha 2

- 1 Kutaa kee keessatti wanta argaman ilaaludhaan sarara wal tarree kan ta'anii fi sarara wal qaxxaamuroo kan ta'an agarsiisi.
- 2 Hiriyyoota kutaa keessa wajjin teessan wajjin mari'adhaatii sararoota wal tarree fi sararoota qaxxaamuroo jechoota mataa keessaniitiin ibsuudhaan barreessaa.
- 3 Danaarratti akkumma argite kanatti sararoota wal tarree ta'an lama dabtara keerratti sarartuu yookaan wannuma ittiin sararuudhaaf si gargaaru fudhachuudhaan itti gargaarami fakkeessi.
- 4 Sararoota wal tarree fakkeessite kanneen kan qaxxaamuran sarara biraa fakkeessi.

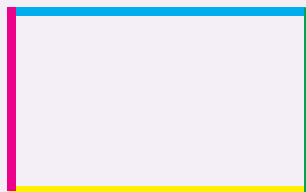


Gilgala - 1

Danaawwan armaan gadii dabtara keerratti erga garagalchiitee booda warra wal tarree ta'anii fi warra qaxxaamuroo ta'an adda baasi.



Danaa armaan gadiitti kenname ilaaluudhaan sararoota warra wal tarree ta'aniifi warra wal qaxxaamuroo ta'an halluu isaaniitiin adda baasi.



6.2 SARAROOTA WALQAXXAAMURAN, WALTARREE FI PARPANDIKULAARII FAKKEESSUU.

6.2.1 Sararoota wal tarree

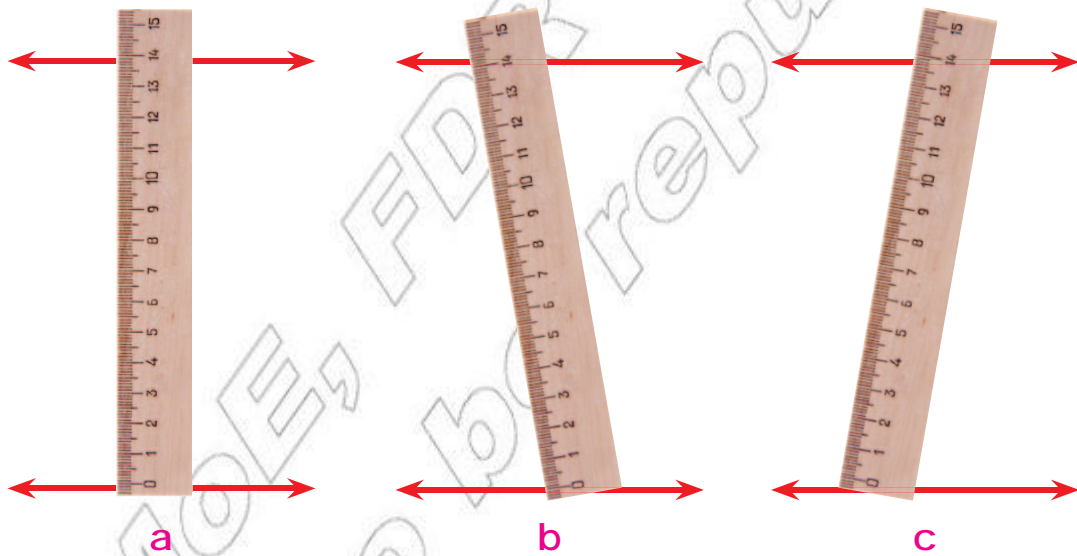
Yaadannoo:

Sararoonni wal tarree:

- ∞ Tuqaa kiphaa hin qaban
- ∞ Yeroo hundumaa kallattiin hariiroo isaanii tokkumaa.
- ∞ Fageenyi gidduu isaanii jiru bakka fedheetti yoo safarame wal qixa.

Gocha 3

- 1 Akkaataan itti safaramu inni sirri ta'e isa kami? (yoo fageenya sararoota wal tarree ta'an jidduu jiru beekuu barbaadan)



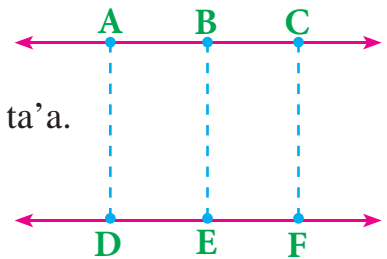
- 2 Gara mirgaarratti kan kennaman sararoota wal tarree kana hubadhaa.

Tuqaawwan kennaman gidduu fageenya jiran safaraa.

Tuqaa 'A' hamma Tuqaa 'D' ti santiimeetiraa (cm) ____ ta'a.

Tuqaa 'B' ti hamma 'E' ti Santiimeetira (cm) ____ ta'a.

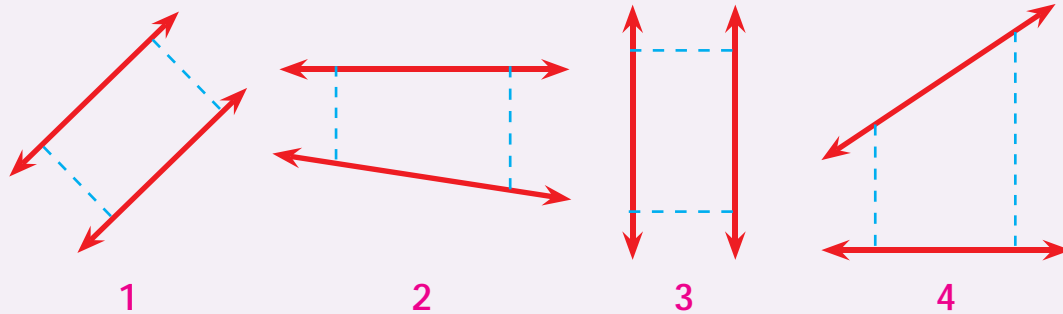
Tuqaa 'C' ti hamma tuqaa 'F' ti Santiimeetira ____ ta'a.



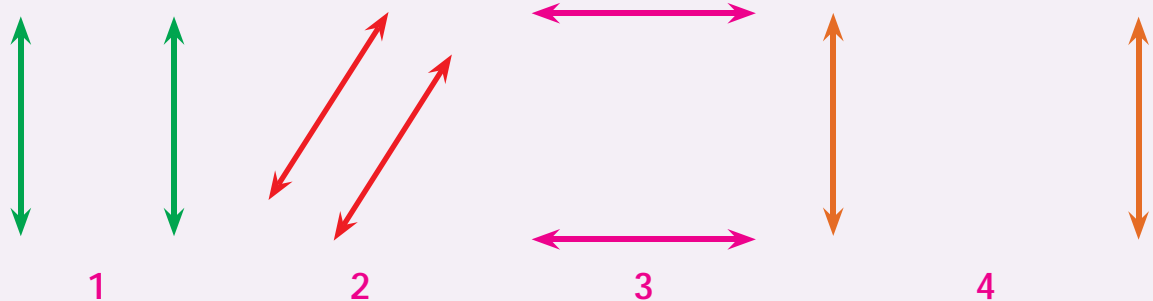
Waa'ee dheerina sararoota dhaabbataa AD, BE fi CF maal jechuu dandeenya?

Gilgaala - 2

Sararoonni cimdii armaan gaditti kennaman waltarree ta'uu fi hin taanee isaanii safaruudhaan mirkaneessi.



Sararoota wal tarree armaan gaditti kennaman gidduu fageenya jiru safarii argisiisi.



6.2.2 Sarartoo fi seet-iskuweerii gargaar- amuun sararoota wal tarree fi sara- roota qaxxaamuroo fakkeessuu

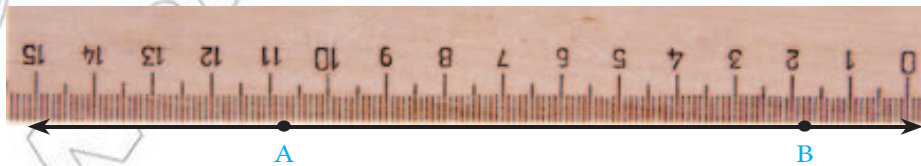
A Danaa Sararoota wal tarree fakkeessuu

Gocha 4

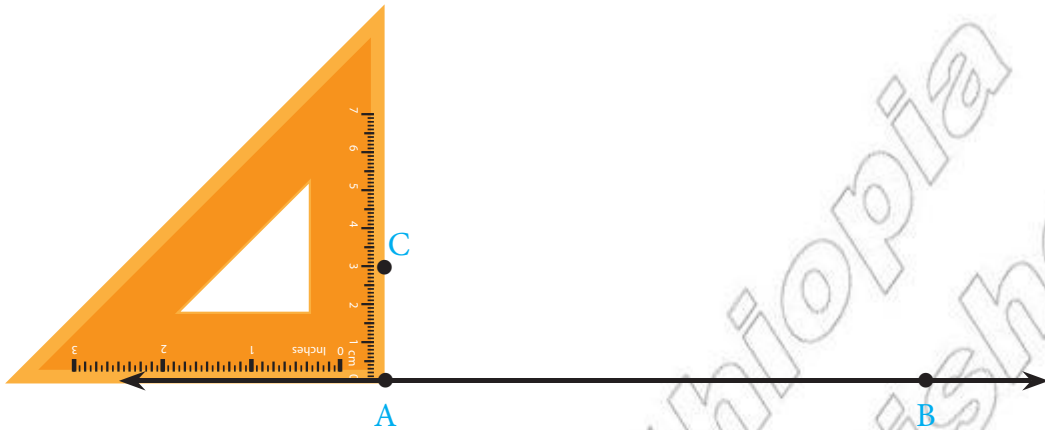
Sararoota Santiimeetira 3 walirraa fagaatan fakkeessi.

∞ Danaa sararoota wal tarree fakkeessuuf qajeelfama armaan gaditti kennaman hordofi.

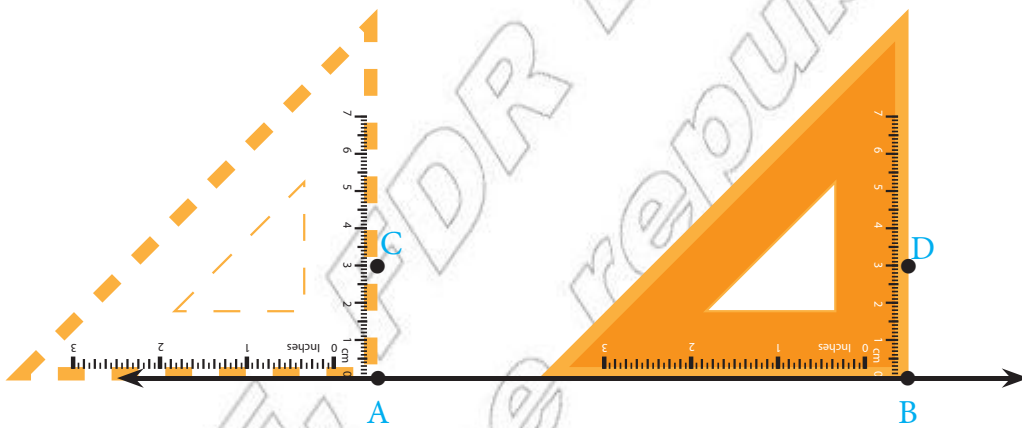
1 Jalqaba irratti sarartoo kee gargaaramii danaa sarara AB fakkeessi.



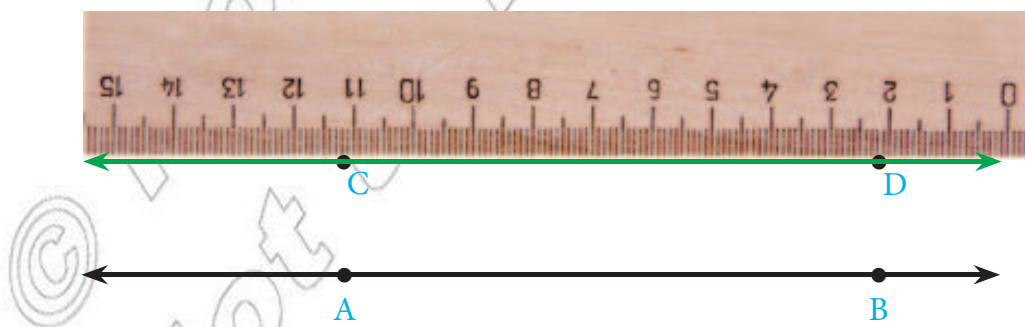
- 2 Itti aansuudhaan akkuma danaa kennamerrati agarsiifameetti seet iskuweerii kee sarara AB irra dalga ciibsudhaan achii ol Santimeetira 3 safariitii tuqaa C kaa'i.



- 3 Achiin booda seet iskuweerii kee gara tuqaa B tti siqsuun akkuma danaarratti agarsiifameetti achii ol santiimeetira 3 safaruudhaan tuqaa D kaa'i.



- 4 Sarartoo kee gargaaramuudhaan sarara karaa Cfi D darbu fakkeessii



Sararoonni lamaan, AB fi CD n fageenya santiimeetira 3irratti kan argaman sararoota wal tarreeti.

Gilgala - 3

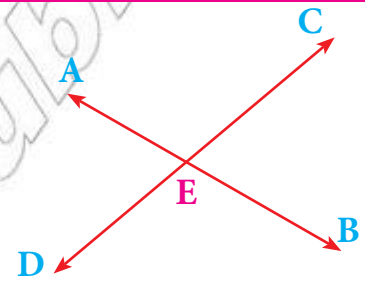
- 1 Sarartoo fi seet-iskuweerii gargaaramuudhaan danaa sararoota wal tarree fageenya kennamanirratti argaman fakkeessi.
 - a 2cm, b 4c c 7cm
- 2 Fageenya walqixa ta'erratti kan argaman danaa sararoota wal tarree ta'an sadii waraqaa qulqulluurratti fakkeessi.

B Danaa Sararoota wal qaxxaamuranii fakkeessuu.

Sararoonni diriiroo tokkorratti argaman lama qaxxaamuroo kan jedhaman, yoo tuqaa kiphaa qabaatan qofa.

Fakkeenya

- ➔ E'n tuqaa kiphaa sararoota AB fi CD ti. Kanaafuu sararoonni AB fi CD sararoota walqaxxaamuroodha.
- ➔ E'n ammoo tuqaa qaxxaamuroo yookaan tuqaa kiphaa jedhama.

**Gochaa 5**

Gaaffilee armaan gadi jiran gareedhaan erga irratti mari'attanii booda deebii isaanii hiriyyoota daree keessaniif ibsaa.

- 1 Diriiroo tokkorratti kan argaman sararoonni wal tarree hin ta'in lama tuqaarratti wal qaxxamuraan meeqa qabu?
- 2 Sararoonni qaxxaamuroon lama tuqaarratti wal kutan lama (tuqaa kiphaa lama) qabaachuu ni danda'uu? Maaliif?
- 3 Fageenya sararoota lama gidduu jiru bakka hundatti safaramee santiimeetira 10 yoo ta'e, sararoonni kun qaxxaamuroo ta'uu ni danda'uu? Maaliif?
- 4 Sararoonni AB fi CD'n wal tarree yoo ta'an akkasumas sararoonni CD fi EF'n wal tarree yoo ta'an sararoonni AB fi EF'n wal tarreedha jechuu ni danda'amaa? Maliif?

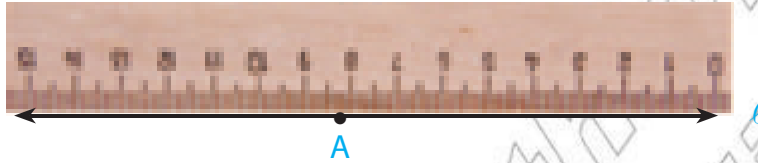
Sararoonni wal qaxxaamuran lama tuqaarratti walqaxxaamuran irratti kofa sirrii yoo uuman sararoota Parpandikulaarii jedhamu.

Gocha 6

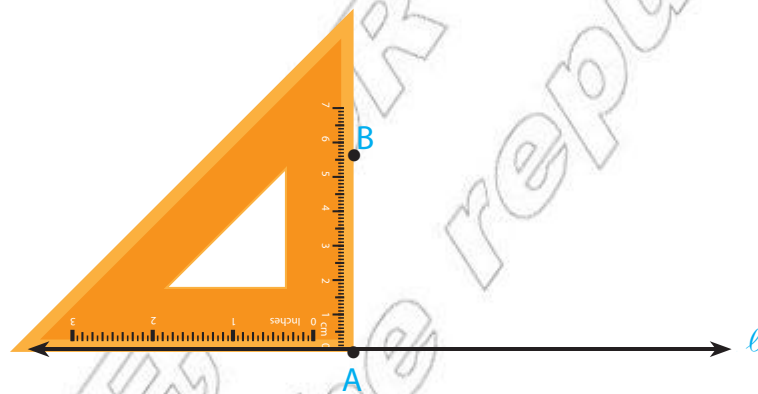
Sarara karaa tuqaa “A” isa sarara qajeelaa ‘ l ’ irra jirurratti parpeendiikulaarii ta’e sarara “ l ” qaxxaamuru fakkeessi.

Sarara parpeendiikulaarii fakkeessuuf qajeelfama armaan gadii hordof.

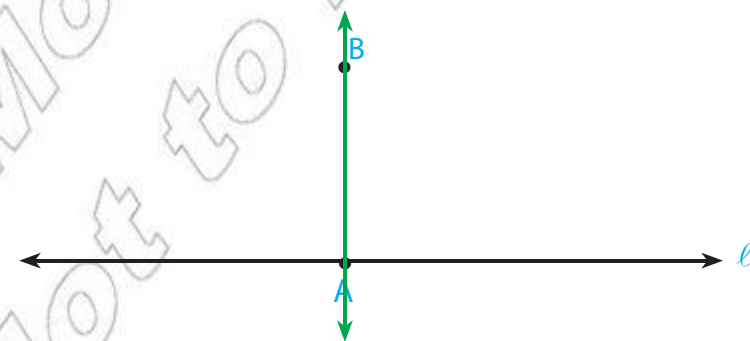
- 1 Jalqaba sarartuu kee gargaaramiitii sarara “ l ” fakkeessi. Sarara “ l ” irra tuqaa fudhuutii A n moggaasi.



- 2 Akkuma danaa kanarratti argitu seet-iskuweerii kee sarara “ l ” irra dalga ciib-siitii kofa sirri seet-iskuweerii keetti tuqaa “A” irra kaa’i, itti aansudhaan sarara seet-iskuweerii keetirraa achii ol tuqaa B moggaasii kaa’i.



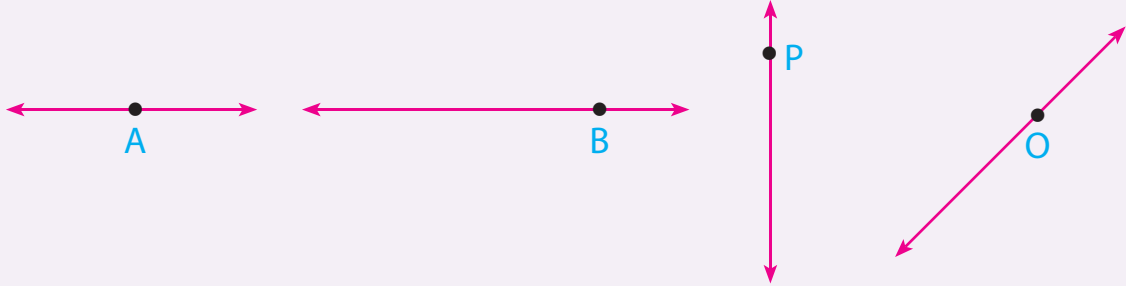
- 3 Sarara karaa A fi B darbu fakkeessi.



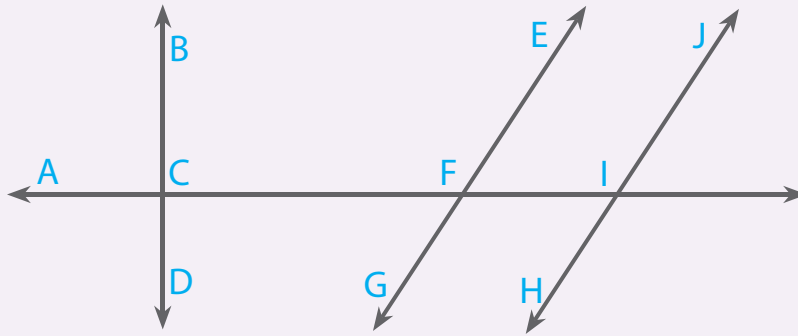
- 4 Sararoonni qajeeloon “ l ” fi AB’n sararoota parpeendiikulaarii ti/dhaasooti.

Gilgaala - 4

- 1 Karaa tuqaalee sarara kennamerratti kan darban sararoota parpandiikulaarii ta'an seet-iskuweerii kee gargaaramuun fakkeessi.



- 2 Danaalee kenname ilaaluudhaan sararoota cimdii wal tarree, wal qaxxaamuranii fi Parpandiikulaarii ta'an adda baasiitii barreessi.

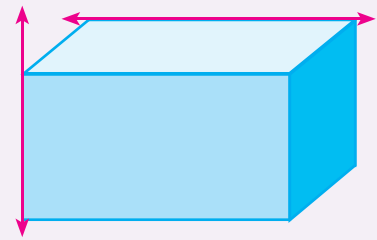


- 3 Sararoonni wal qaxxaamuroon hundi parpandiikulaariidhaa? Maaliif?

Dabalata

Sararoonni danaarratti kennaman sararoota akkamiiti?

- 1 Sararoonni kennaman kun sararoota qaxxaamuroo ta'uu ni danda'uu?
- 2 Wal tarree hoo ta'uu ni danda'uu?

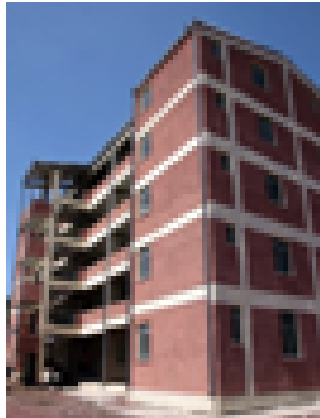


Sararoonni akkasii sararoota wal hin arganne jedhamu. Mee kutaa kee keessaa sararoota wal hin arganne barbaadiitii agarsiisi.

6.3 REEKTAANGILOOTA, ISKUWEEROTA, PARAALELOOGIRAAMOTAA FI TIRAAPPIIZIYEMOOTA.

Gabateen gurraachi kutaa keetti argamu baayyeen isaanii boca rog afree qabu.

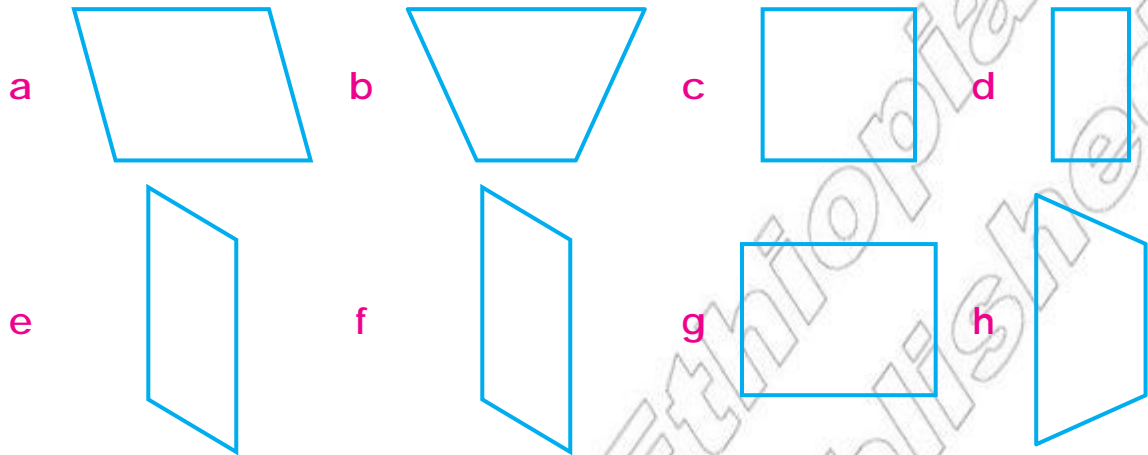
Manneetiin kondominiyeemii magaalaa Finfinneetti ijaaraman baayyeen isaanii boca rogarfee qabu.



<i>Paraaleloogiraamii</i>	<i>Tiraappiiziyemii</i>	<i>Reektaangilii</i>
Rog-afree rogni cimdiin walfullee ta'an waltarree fi dheerina walqixa ta'e qabaniidha.	Rog-arfee rogni cimdiin tokko qofti waltarre ta'e dha	Paraaleloogiraamii kofti isaa arfan kofa sirrii ta'an
<i>Rohombosii</i>	<i>Iskuweerii</i>	
Paraaleloogiraamii dheerinni roga isaa arfan walqixxee ta'e dha.	Paraaleloogiraamii kofti isaa arfanii fi rogni isaa arfan walqixa ta'an	

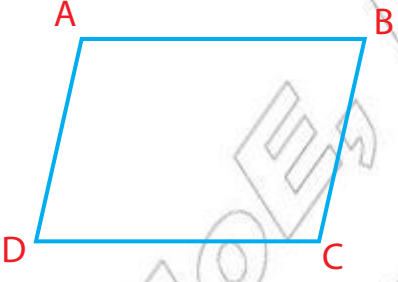
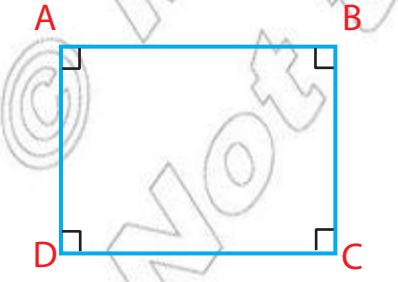
Gocha 7

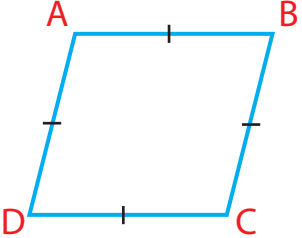
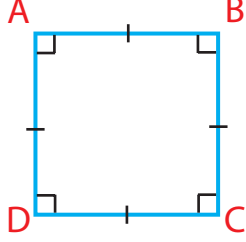
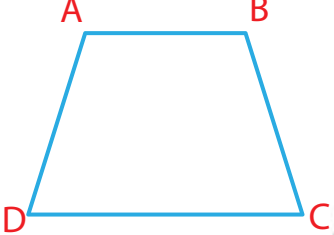
- 1 Fakkiiwwan rogarfee armaan gadii keessatti kennaman moggaasa maqaa isaaniirratti cimdii cimdiidhaan erga irratti mari'attanii booda ibsa itti kennaa.



- 2 Kutaa keessan, mana keessanii fi naannoo keessanitti meeshaalee argaman ilaalaatii kan boca paaralalogiraamii, rektaangilii, iskuweerii, tiraapiziyemii fi rohombosii qaban adda baasuudhaan hiriyyootan keessan kutaa keessa jiraniif ibsaa.

Amaloota rog afree sasalphaa

a	Paaralalogiraamii	
		<p><i>Rogoonna fuulleen wal tarreedha.</i></p> <p><i>Rogoonna fuulleen dheerinni isaanii walqixa</i></p>
b	Reektaangilii	
		<p><i>Rogoonna fuulleen wal tarreedha</i></p> <p><i>Rogoonna fuulleen dheerinni isaanii walqixa.</i></p> <p><i>Kofoonna isaa arfanuu kofa sirriidha.</i></p> <p><i>(Rogaaleen maddii parpendiikulaariidha.)</i></p>

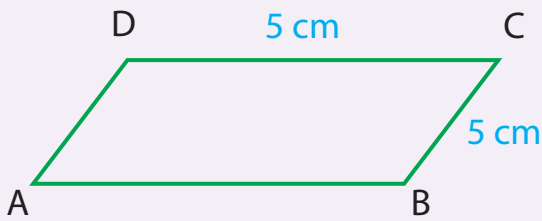
c	Rohombosii	
		<p><i>Rogaaleen fuulleen wal tarreedha.</i></p> <p><i>Rogaaleen isaa arfanuu dheerinni isaanii walqixa.</i></p>
d	Iskuweerii	
		<p><i>Rogaaleen fuulleen wal tarreedha.</i></p> <p><i>Rogaaleen isaa arfanuu dheerinni isaanii walqixa.</i></p> <p><i>kofoonni isaa arfanuu kofa sirroota/qixxeedha.</i></p>
e	Tiraappiiziyemii	
		<p><i>Rogaaleen fuulleen cimdiin tokko wal tarree dha</i></p> <p><i>Rogaaleen cimdiin tarree ta'an dheerinni isaanii garaagara.</i></p>

Gocha 8

- 1 Ibsa waa'ee amaloota rog arfee sasalphaa armaan olitti kennamanii sirritti dubbisaa. Itti aansuudhaan gaaffilee armaan gaditti kennaman gareedhaan kutaa keessatti irratti mari'adhaa. Isa booda sobaa fi dhugaa ta'uu isaanii sababa isaa wajjiin adda baasaatii hiriyoottan daree keessaniif dhiyeessaa.
 - a Rektaangiliin kamiyyu paaraalaloogiraamiidha.
 - b Tiraappiiziyemiin kamiyyu paaralalogiraamiidha.
 - c Iskuweeriin kamiyyu roombasiidha.
 - d Reektaangiliin kamiyyu iskuweeriidha.
 - e Iskuweeronni tiraapiziyemii ta'uu ni danda'u.

Gilgaala - 5

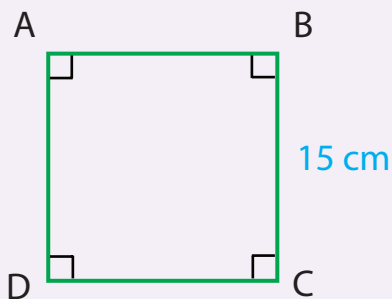
1 *Rogaalee armaan gaditti kennaman utuu hin safariin dheerina isaa barreessi.*



Paaraalaloogiraamii

$$AB = \underline{\hspace{1cm}} \text{ cm}$$

$$AD = \underline{\hspace{1cm}} \text{ cm}$$

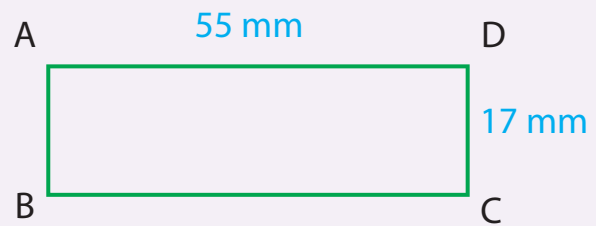


Iskuweerii

$$AB = \underline{\hspace{1cm}} \text{ cm}$$

$$DC = \underline{\hspace{1cm}} \text{ cm}$$

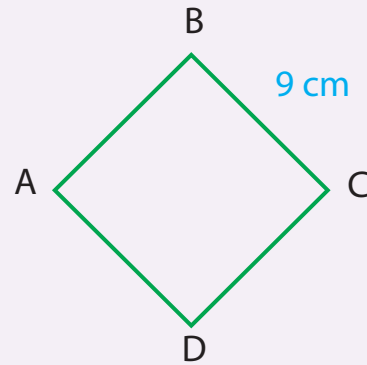
$$AD = \underline{\hspace{1cm}} \text{ cm}$$



Rektaangilii

$$AB = \underline{\hspace{1cm}} \text{ mm}$$

$$BC = \underline{\hspace{1cm}} \text{ mm}$$



Roombasii

$$AB = \underline{\hspace{1cm}} \text{ cm}$$

$$AD = \underline{\hspace{1cm}} \text{ cm}$$

$$DC = \underline{\hspace{1cm}} \text{ cm}$$

2 Kan armaan gadii keessaa paaraalaloogiraamii kan hin ta'iin fili.

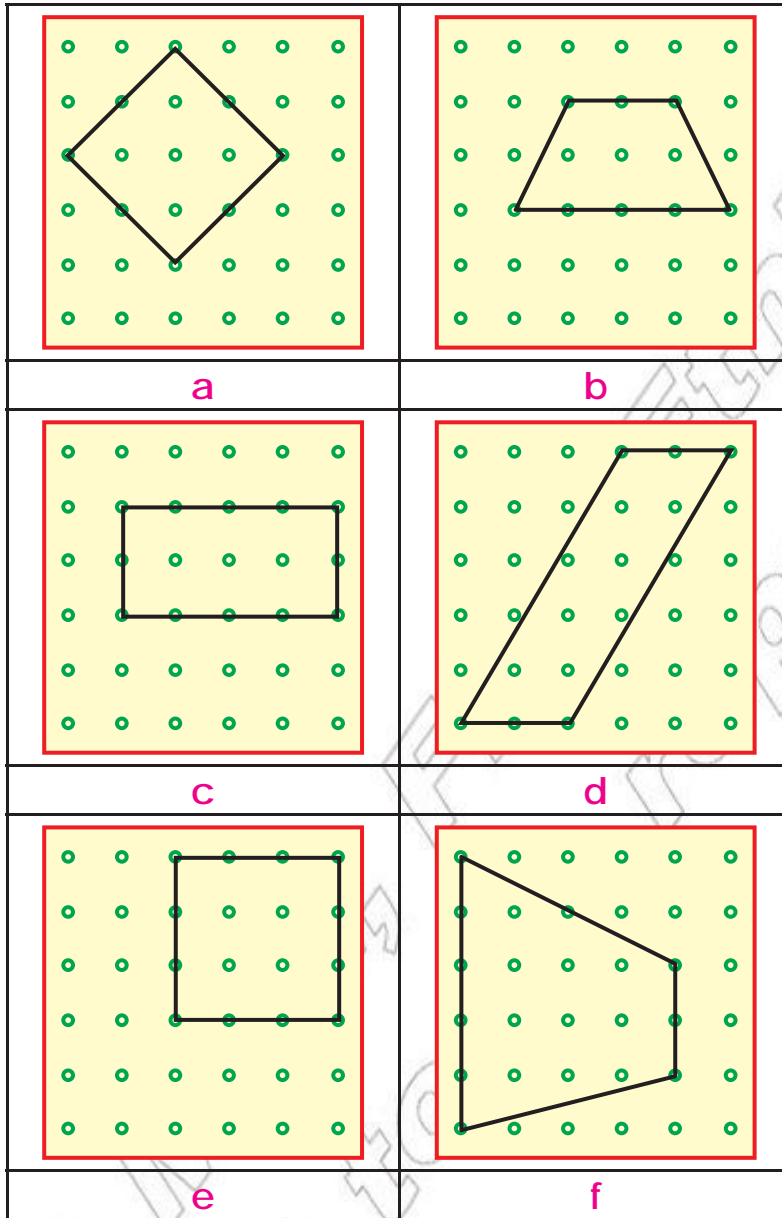
- | | |
|--------------------------|-----------------------|
| a Iskuweerii | b roombasii |
| c Tiraappiziyemii | d Rektaangilii |

3 Rektaangiliis roombasiis kan ta'e isaa kami?

- | | |
|------------------------------|---------------------|
| a paaraalaloogiraamii | b Iskuweerii |
| c Tiraappiziyemii | |

Gocha 9

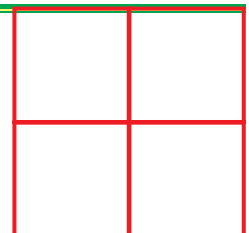
1 Fakkiilee tuqaaleen fakkeeffaman armaan gadii waraqaa keessanirratti sirritti garagalchaa. Tuqaalee kana wal qabsiisaatii rog arfee fakkeessaa. Maqaa rog arfoota kanneeniimmoo jalatti Barreessaa.



Dabalata

Barbaadaatii argadhaa.

- 1 Fakkii kenname kana keessa iskuweerota meeqa tu jira?
- 2 Reektangiloota meeqatu jira?

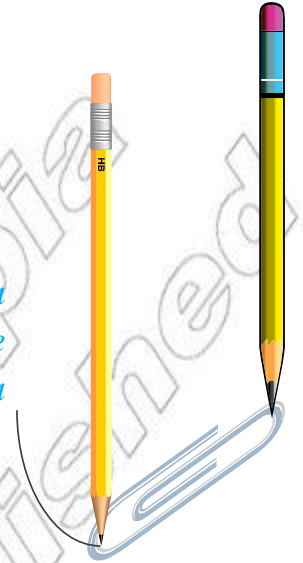


6.4 GEENGOO

Wantootaa adda addaa naannoo keetti argaman gargaaramuudhaan geengoo fakkeessuu ni dandeessaa?

Agiraafii ittiin waraqaa wal qabsiisanitti gargaaramuun geengoo fakkeessuu ni dandeessa.

- ✎ Fiixee qubeessaa keetii isa tokkoo tuqaa ka'umsaa irra ka'itii sirriitti akka hin sochonetti gadi qabi. Fiixee qubeessaa keetii isa lammaffaa mataa agiraafii keessaa galchuun naanneessi. Fakkiin argamu geengoo ta'a.
- ✎ Tuqaan ka'umsaa kun handhuura geengichaa jedhamti.



Gocha 10

Wantoota naannoo keessanitti argaman adda addaatti gargaaramuun geengoowwan adda addaa fakkeessi.

Geengoon kun geengoo 'A' jedhamee waamama.

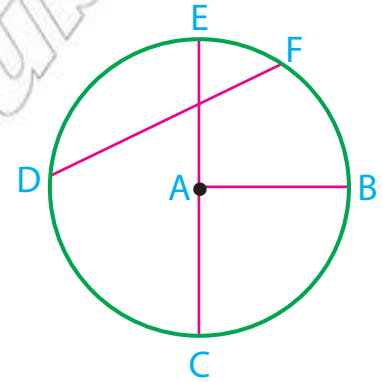
Tuqaa "A" n handhuura jedhama.

Sararri tuqaalee geengoo tokkorratti argaman lama wal qabsiisu koordii jedhama. sararri dhaabbataan DF koordiidha.

Koordiin inni handhuurarra dabruun tuqaalee geengoo lama walqabsiisu diyaameetirii jedhama..

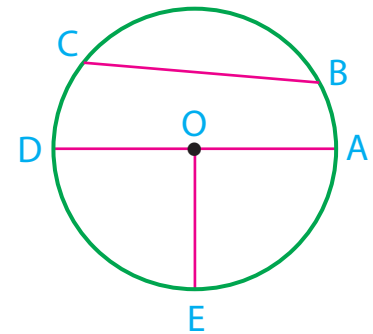
Sararri dhaabbataan inni handhuuraa fi tuqaa geengoorratti argamu kamiyyuu wal qabsiisu raadiyasii jedhama.

Dheerinni raadiyasii walakkaa dheerina diyaameetiriiti.



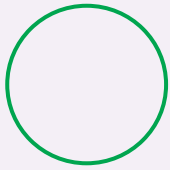
Gocha 11

- 1 Maqaa handhuura geengoo kennamee barreessi.
- 2 Maqaa koordota geengichaa barreessi.
- 3 Maqaa diyaameetirii geengichaa barreessi.

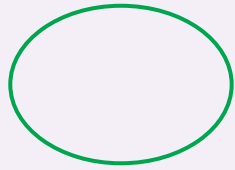


Gilgaala - 6

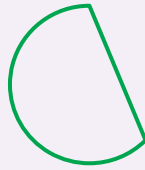
1 Warra geengoo ta'an keessaa fili.



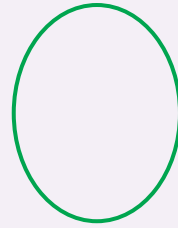
a



b

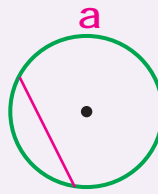


c

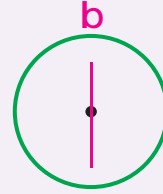


d

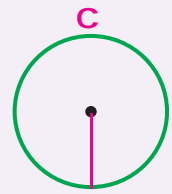
2 Isa raadiyasii agarsiisu fili.



a

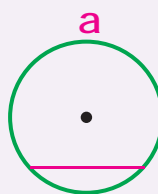


b

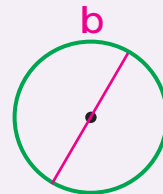


c

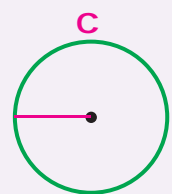
3 Isa diyaameetirii agarsiisu fili.



a

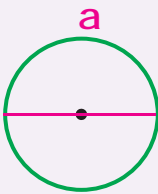


b

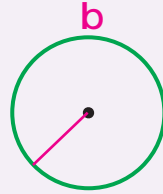


c

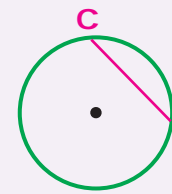
4 Isa koordii agarsiisu fili.



a



b



c

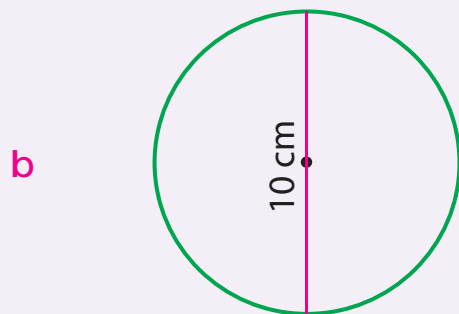
5 Geengowwan kennaman ilaaluudhaan bakka duwwaa guutaa.



a

Raadiyaasii = ____ cm

Diyaameetirii = ____ cm



b

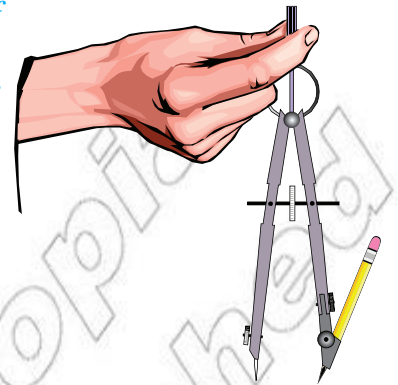
Raadiyaasii = ____ cm

Diyaameetirii = ____ cm

kompaasiitti gargaaramuun gengoowan fakkeessuu

Kompaasiitti gargaaramuun geengoo fakkeessuudhaaf qajeelfamoota kana hordof.

- 1 *Dheerina raadiyaasii barbaaddeen fixee qubeessaafi fixee kompaasii gargar saaqi.*
- 2 *fixee qara kompaasii tuqaa tokkorra kaa'i. Tuqaan kunis handhuura geengichaa ta'a.*
- 3 *Fiixee qubeessaa koompaasichaa naannoo tuqaa handhuuraarraa naanneessi.*



Gocha 12

- 1 Waraqa keessan irratti geengoo dheerinni radiyasii isaa santimeetira 3 ta'e fakkeessi.
- 2 Handhuura geengichaa C jedhii moggaasi.
- 3 Radiyesii fakkeessiitii \overline{CB} jedhii moggaasi.
- 4 Diyaameetirii fakkeessii ti \overline{EF} jedhii moggaasi.
- 5 Koordii fakkeessiitii \overline{GH} jedhii moggaasi.
- 6 Koordii isa karaa C darbu fakkeessii ti \overline{HI} jedhi moggaasi. Maqaan HI kan biraan maali?

Gilgaala - 7

1 **Gabatee kana guuti.**

Raadiyesii	2 cm	5 cm		9 cm		15 cm	
Diyaameetirii	4 cm		16 cm		26 cm		36 cm

2 **Soba yookaan dhugaa jedhii deebisi.**

- a Geengoo kamiifiyyuu dheerinni raadiyesoota isaa walqixa.
- b koordii fi radiyesiin isaan tokkuma.
- c Koordiin geengoo tokkoo hundi isaanii dheerina walqixa ta'e qabu.
- d Fageenyi tuqaaleen geengoo tokkorratti argamanii handhuura isaarraa qaban adda adda ta'u ni danda'a.
- e Koordiin inni dheeraan diyaameetiriidha.
- f Dheerinni diyaameetirii walakkaa dheerina radiyesii.