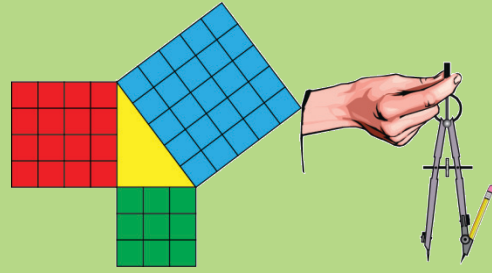


Cutubka

5aad



SHAXANADA JOOMATARIGA IYO CABBIRAADA

UJEEDDOOYINKA CUTUBKA

Dhamaadka cutubkani waxaad awoodi doontaa inaad

- ✚ Ogaato(garataa) astaamaha dhidib wanqareedka iyo waliba inaad aqoontan u adeegsato dhismaha.
- ✚ Kalabadhid xariijimaha iyo xaglaha.
- ✚ Garato hal beega (digrii) aanad awoodo in aad cabirto inta ay le'eg tahay xagal lagu siiyay.
- ✚ Fahanto, isticmaashana qaacidada bedka si aad u soo saarto bedadka laydiyada iyo labajibbaarayaasha.
- ✚ Fahanto, isticmaashana qaaciidooyinka mugga si aad u soo saarto mugga adkaha ka samaysana dhinacyada laba jibbaarane iyo birisamyada laydiyeed muggooda.

TUSMOOYINKA MUHIIMKA AH

- 5.1** Xariiqyada
- 5.2** Xaglaha iyo cabbiraado xaglaha
- 5.3** Noocyada saddex xagalada
- 5.4** Xariiqyada wanqarka
- 5.5** Cabbiraad
 - Erayada furaha ah
 - Soo koobida
 - Laylisyada guud

HORDHAC

Cutubkan dhexdiida waxaad awoodi doontaa inaad sawirto xariiqyo barbaroolaha iyo xariiqyo is jara iyo waliba waxaad ku baran sida wax loo sawiro ayadoo la adeegsanayo urur laba jibbaaranayaal ah, (qalab), lammaane kombas ah iyo mastarad. Waxaad qeexi doontaa, cabbiri doontaa, kalana saari doontaa astaamihiisana waxaa lagu baran doonaa wareeg iyo badadka laba jibbaaranaha iyo laydiyadana waa la nakhtiimi doonaa. Sawirada Adkaha wajiyadiisu yihiin laba jibbaaranaha iyo birisam laydiyeedka ayaa la sawiri doonaa, waana la midabayn, muggagoodana waa la heli ayadoo adkayaashan laga buuxinayo, hel-saddex jibbaarane (unitcubes).

5.1 XARIIQAHA

5.1.1 SAMAYNTA (DHISIDA) XARIIQAHA IS-JARA (ISGOYNAYA) IYO KUWA BARBARADA AH

Xariiq toosan waa urur baro ah oo isu tagga, kuwaas oo aan lahayn ballac, laakiin waa la dheerayn karaa, ayadoo labada dhinacba loo kala fidin karo.

Xariiqda ayaan ku tilmaan sanaynaa, inakoo qaadanayna laba barood oo kasta oo ka mid ah xariiqda dusheeda. Haddii;

B iyo T ay yihiin laba barood oo ku dul dhaca xariiq lagu siiyay, dabadeed waxaan siin karnaa xariiqda marta labada barood sumad \overline{BT} : xariiqyada ku dul-dhaca sallax way is-jaraan (isgooyaan) ama waa barbaro. Qayb hoosaadkan, waxaad ku baran doontaa sida loo dhiso (sameeyo) xariigaha is gooya iyo kuwa barbarada ah.

Hawlgalka 5.1



Buugaaga qorista waxaad ku sawirtaa xariiq iyo bar aan ku dul-dhicin xariiq.



Sawirka 5.1

- 1 Adigoo isticmaalaya mastarad waxaad sawirtaa xariiqo inta aad doontid oo mara barta jaran, xariiqda L imisa xariiqood ayaad sawirtay? Mid? Laba? Saddex? Badan?
- 2 Sawir inta aad doonto oo xariiqood oo mara barta lagu siiyay. Imisa xariiqood oo ka mid ah xariiqahan ayaan gooynin xariiqda L? mid? Laba? Saddex? In badan?
- 3 Su'aalaha 1 iyo 2 muhimada aad ku soo gabagabayn lahayd waa maxay?

Hawlgalka 5.1 gabagabooyinkan ayaa laga samayn karaa.

Bar lagu siiyay oo aan ku dul dhicin xariiq lagu siiyay waxaa mara

1 Xariiqyo badan oo jara xariiqda lagu siiyay

waa laga sawiri karaa.

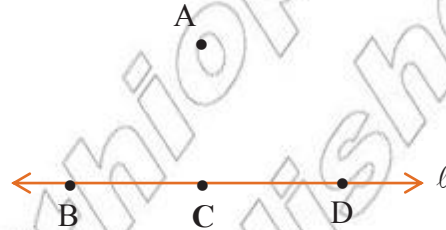


2 hal xariiq oo kaliya oo

la barbar dhigo xariiqda lagu siiyay ayaa laga sawiri karaa.

Xariiqdan waxaa lagu magacaabaa xariiqda barbarada la ah xariiqda **L**, sawirka 5.2.

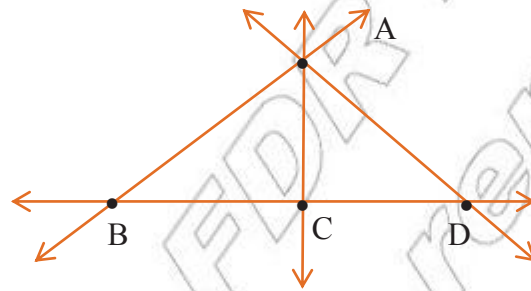
Tusaale 1: Sawirkan hoose ku guuri buugaaga qorista dabadeed sawir 3 xariiqood oo mara A ka jarana xariiqda l baraha B, C, D.



Sawirka 5.2

Furfuris:

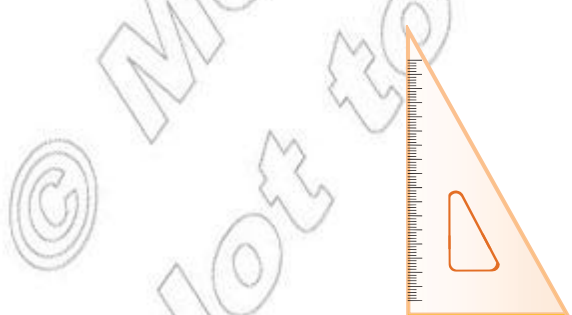
AB, AC, iyo AD waxay ka jaraan l baraha B, C, D sida ay isugu xigaan.



Sawirka 5.3

Aan eegno sida loo sawiro xariiqyo barbaro la ah xariiqda L oo mara bar aan ku dul dhicin xariiqda L.

Qalabka laba jibbranuhu waa qalab xisaabeed la adeegsado marka la dhisayo Qotome maraaya bar dibada ka ah xariiq la doonayo in qotome loo dhiso.



Sawirka 5.4

SHAQO KOOXEEDKA 5.1



Shaqa kooxeedan waxaan ku baran doonaa talabooyinka loo baahan yahay in la fuliyo marka la sawirayo (dhisayo) xariiq barbar u ah xariiq la ina siiyay oo mara bar dibada ka ah xariiq na la siiyay inaga oo adeeg sanayna qalabka loo yagaano seed Is kuweer iyo mastarad.

Talaabooyinka Loo Baahan yahay:

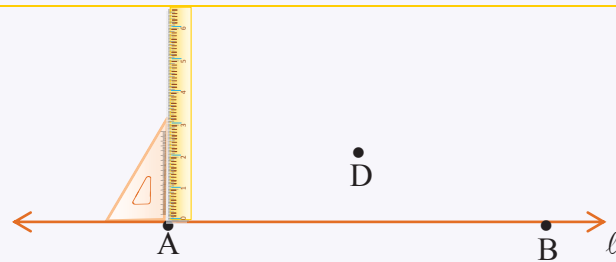
1 Sawir xariiqda L iyo bar aan ku dul dhicin xariiqda L.



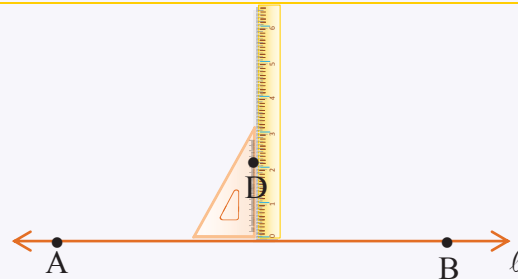
2 Dul-dhig qalabka laba jibbaaranaha gacmahiisa xagasha quman ah mid ka mid ah xariiqda dusheeda, adigoo ka bilaabaya barta A ama B.



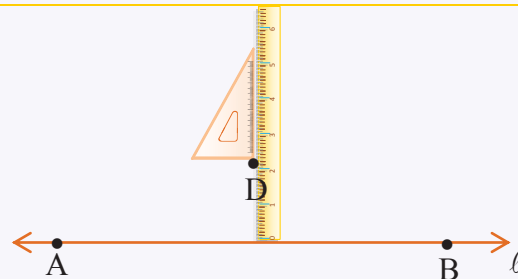
3 Mastarad dul-dhig dhinaca kale ee qalabka labajibaaranaha ah.



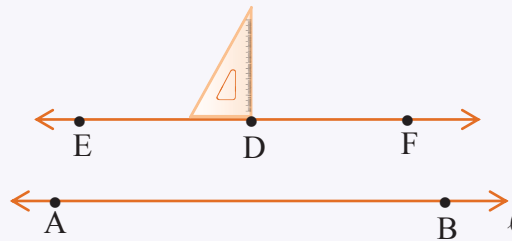
4 Riix laba jibbaaranaha iyo mastaradaadaba AB dusheeda ilaa mastaradu ay marayso barta D.



5 Dul-riix qalabka laba jibbaarka ah mastarada dusheeda xaga sare ilaa dhinaca hoose ee laba jibbaaranuhu uu gaadho barta D.



6 Sawir xariiq marta D qalabka laba jibbaaranaha hoostiisa, adigoo ku haynaya qalabka laba jibbaaranaha bar cayiman. Dabadeed EF waa xariiq barbaro la ah xariiqda L oo marta barta D.



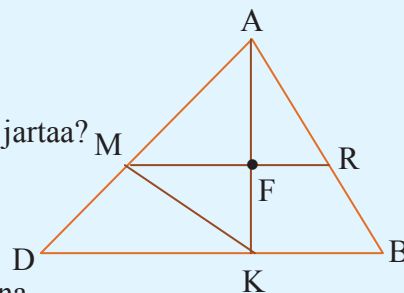
LAYLIKA 5.1

1 Adigoo isticmaalaya sawirka

b magacow 3 xariiqood oo mara M

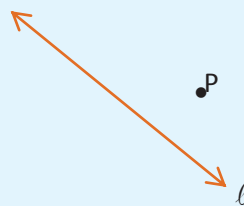
t \overline{MF} miyay jartaa \overline{BA} ? Bartee ayay ka jartaa?

j imisa xariiqood oo mara barta B oo barbaro la ah \overline{KA} ayaad sawiri kartaa?



Sawirka 5.5

2 Ku guuri sawirka buugaaga qorista, dabadeedna sawir shan xariiqood oo mara barta P jarana xariiqda L.



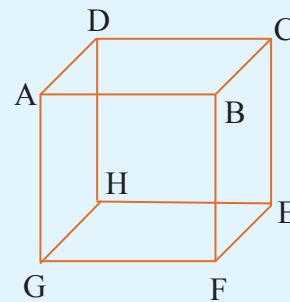
Sawirka 5.6

3 Aan qaadano sanduuq laydiyeed

b magacow saddex lamaane oo xariiqood oo barbaro ah

t magacow 2 lamaane oo xariiqyo is-jara ah

j halkee ayay iska jaraan \overline{BF} iyo \overline{EF} ?



Sawirka 5.7

4 Haddii ay laba xariiqood is-jaraan imisa meelood ayay iska jaraan?

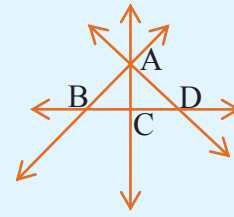
5 Wax yaalaha aad ku aragtid fasalkaaga dhexdiisa, ka bixi tusaalayaal ina tusaya xariiqyo is-jara iyo xariiqo barbaro ah.

6 Sawirkan

b halkee ayay \overline{AC} ka jartaa \overline{BC}

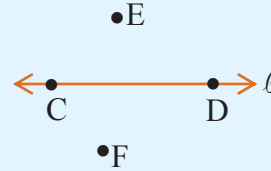
t miyay $\overline{AD} \parallel \overline{BC}$? Waayo?

j halkee ayay \overline{AB} , \overline{AC} iyo \overline{AD} ku kulmaan?



Sawirka 5.8

7 Sawirka 5.9 adigoo isticmaalaya qalabka labajibbaaranaha iyo mastarad sawir xariiqyo mara baraha E iyo F oo barbaro la ah CD miyay xariiqda marta E barbaro la tahay xaariiqda marta F?



Sawirka 5.9

5.1.2 KALA BADHIDA XARIIJIN LAGU SIIYAY

Qaybtan waxaad ku baran doontaa sida xariijin lagu siiyay loo kala badho ayadoo la isticmaalayo qalabada gooba Beeg iyo mastarad.

Ogow: xariijinta AB waa urur ka kooban baraha A iyo B iyo dhamaan baraha u dhexeeya A iyo B, Baraha waxaa la yidhaahdaa bar-dhammaadka xariijinta.



Sawirka 5.10

Marka aan dhisayno dhismo joomatari, waxaan isticmaalaynaa laba shay (qalab) oo muhiim ah. Gooba beeg iyo mastarad.

✚ Gooba beeg waa qalab loo isticmaalo in lagu sawiro goobada ama qaanso.

✚ Mastarada waxaa loo isticmaalaa in laysku xidho laba barood, adoo isugu xidhaya xariiq ama xariijin.



Aan eegno hawlgalada soo socda:

Hawlgalka 5.2


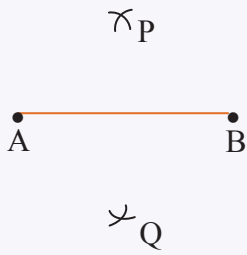
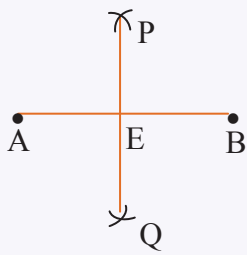
- 1 Imisa barood ayaa xariijinta dusheeda ku dhaca?
- 2 Imisa barood oo xariijinta ah ayaa labada meelood oo isle'eg u qaybiya xariijinta? Maxaad u bixin barta labada meelood oo isle'eg u qaybiya xariijinta?



- 3 Imisa xariiqood oo mara barta xariijinta u qaybisa labada meelood ee isle'eg ayaad sawiri kartaa? Maxaad u bixin xariiqahan? Imisa ka mid ah xariiqahan ayaa ku qotoma xariijinta?.
- 4 Miyaad ku tilmaami (dhigi) kartaa barta xariijinta badha? Miyaad ku tilmaami kartaa bar badhtanka xariijinta adigoo isticmaalaya kombaska iyo mastarada?

Talaabooyinkan soo socda waa lagama-maarmaan si xariijinta laba meelood oo isle'eg loogu qaybiyo ayadoo la isticmaalayo kombas iyo mastarad. U fiirso si degan.

DHISMAHA 1^{AAD}:

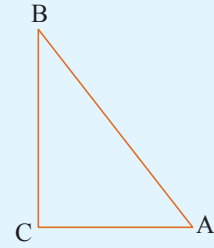
<p>Talaabo 1^{aad}: dul-dhig kombaska labada cidhif ee xariijinta mid ka mid ah, kombaska afkiisa kala fur ama gacanku ha ka dheeraado xariijinta badhkeed, sawir</p> <p style="padding-left: 40px;">Laba goobo gobol oo Midna xariijinta ka Sareeyo midna ka hooseeyo</p>	
<p>Tallaabada 2^{aad}: ayadoo kombaska afkiisa intii kala furan yahay, macnaha gacanku aanu isbedelin kombaska saar-dhinaca kale ee xariijinta, dabadeedna ku samee laba goobo gobol oo midna ka sarayso xariijinta midna ka hoosayso, u bixi meesha goobo gobaladu iska jaraan P iyo Q.</p>	
<p>Talaabada 3^{aad}: isku xidhka PQ adigoo isticmaalaya mastarada ku soo qaad barta ay isku jaraan PQ, iyo AB ay tahay E, dabadeed E waa barta u qaybisa AB, laba meelood oo isle'eg.</p>	

LAYLIKA 5.2

- 1 Sawir BQ oo dhererkeedu yahay 10sm.
 - b tilmaan bar-badhtanka adiga oo isticmaalaya mastarada.
 - t tilmaan bar badhtanka adigoo isticmaalaya kombas iyo mastarad.
 - j b iyo t ma waxaad heshay bar isku mid ah.

2 Sawirka 5.11, meele.

- b** bar badhatanka BC adigoo isticmaalaya Kombaska iyo mastarada una bixi E.
t bar badhtanka AC una bixi F.
j dhererka EF waa imisa? Isbarbar dhig EF iyo BC?



Sawirka 5.11

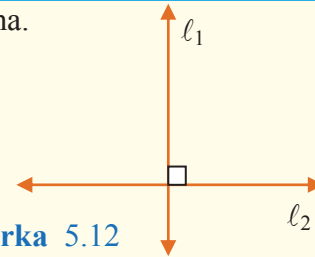
- 3 Sawir xariijinta AB oo dhererkeedu yahay 20 sm. Laba isleeg u qaybi adigoo isticmacmaalya kombaska iyo mastarada, u bixi A. imisa xariiqood ayaa mara barta A? dhammaan xariiqyadani miyay yihiin A iyo B kuwa u qaybiya AB laba meelood oo isleeg.
- 4 Dhismaha kowaad ee tallaabada kowaad ee xagga sare maxaa dhici haddii uu gacanku ka gaaban yahay barta xariijinta dhererkeeda.

5.1.3 SIDA LOO DHISO XARIIQ KU QOTONTA XARIIQA LAGU SIIYAY

Tusmo hooseedka cutubkan waxaad ku baran doontaa laba dhismayaal oo kale, kuwaas oo ah dhisida xariiq ku qotoma, bar ka mid ah xarriiq lagu siiyay iyo xariiq ku qotoma bar aan ku dhicin xariiqada lagu siiyay dusheeda.

Xasuus:

labada xariiqood ee sameeyay dhaha xariiqyo isku qotoma. Haddii L_1 ay ku qotonto L_2 waxaan u qornaa $L_1 \perp L_2$, waxaan u akhriinaa L_1 waxay ku qotontaa L_2 .



Sawirka 5.12



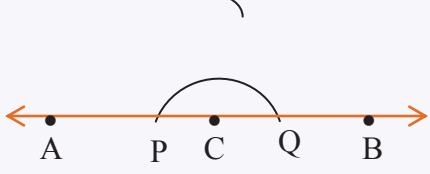
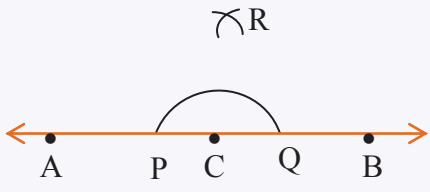
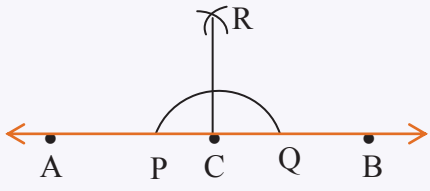
Hawlgalka 5.3

- 1 Bar ku taala xarriiq dusheeda imisa:
b xariiqood ayaad ku sawiri kartaa, oo mara.
t xariiqyo ku qotoma miyaad ku sawiri kartaa?
- 2 Bar ku taala meel aan ahayn xariiqda dusheeda imisa:
b xarooqood ayaa mara?
t xariiqo ku qotoma miyaad sawiri kartaa?



Hadda aan fiirino sida loo dhiso (sameeyo), xariiq ku qotonta barta C oo ku taalla xarriiqda BT.

Dhismaha 2^{aad}:

<p>Tallaabada 1^{aad}: qaado barta C oo ku dul dhacda AB.</p>	
<p>Tallaabada 2^{aad}: gacanka aad doonto kala fidi kombaska adiga oo xudunta ka dhigaya sawir goobo-goobo ka jarta AB, baraha PQ. Sawir</p>	
<p>Tallaabada 3^{aad}: adiga oo ku haynaya kambaska barta P gacankan ka waynaynaya dhererka P iyo C, sawir goobo ka sareeya Xariiqda. Sawir</p>	
<p>Tallaabada 4^{aad}: isagoo kombasku furan intii gacankii hore in la mid ah xudunta ka dhigo Q, dabadeedna sawir goobo-goobo xagga sare ee xarriiqda. Sawir.</p>	
<p>Tallaabada 5^{aad}: isku xidh RC kaasoo ku qotoma xariiqda maran barta C. Sawir.</p>	

SHAQO KOOXEEDKA 5.2



Shaqo kooxeedkan waxaad ku dhisi doontaa xariiq ku qotonta barta lagu siiyay oo aan xariiq lagu siiyay kudul oolin. Raaci tallaabooyinkan dhisan.

Tallaabada 1^{aad}: sawir xarriiq, qaadana barta C oo aan ku dul-dhicin Xariiqda.

Tallaabada 2^{aad}: komabaskaaga saar barta C, dabadeed gacanka aad doonto kombaska fur kuna samee goobo-goobo jarta xarriiqda, kasoo qaad in goobo-gobolku ka jiro xariiqda R iyo S, (haddii goobo gobolka jira, waayo xariiqda labaad dhinac u kala jiid Xariiqda).

Tallaabada 3^{aad}: kombaska saar barta R, dabadeed gacan ku haboon, ku sawir, goobo-gobolka (goobo-badhkeed) hoosaysa xariijinta.

Tallaabada 4^{aad}: Gacan isku mid ah adigoo isticmaalaya kombaska saar barta S, sawir goobo-gobol, jara goobo-gobol jara, goobo-gobolkii aad ku samaysay tallaabadii 3^{aad}. U bixi meesha ay isku jaraan T. isku xidh CT. dabadeed CT waxay ku qotontaa xariiqda lagu siiyay.

LAYLIKA 5.3

- 1 Sawir xariijin 20sm dhererkeedu yahay qaado bar u jirta 13 sm, cidhifka xariijinta, dabadeed dhis xariiq ku qotonta oo marta bartaas.
- 2 Sawir xariijin CD, qaado barta A oo ka saraysa xariijinta, samee xariiq ku qotonta xariijinta CD, oo marta barta A.
- 3 Xariiq lagu siiyay, ka qaado laba barood oo kala duwan, dabadeed dhis (samee) laba xariiqood oo ku qotoma labadaas barood? Xariiqyadani ma barbaraa?

5.2 XAGLAHA IYO CABBIRKA XAGLAHA

Tusmo hoosaadkan cutubka wali waxaaad ku baran doontaa, waxyaalo kale oo muhiim ah oo fikradaha joomatariga, xagal waxaad qeexi doontaa, sheegina doontaa geeska iyo gacmaheeda, cabbiri doontaa, sawiri doontaa, una kala saari doontaa xaglaha kooxo kala duwan oo ku salaysan cabbiradooda, waxaa kale oo aad ku baran doontaa sida xagal loogu qaybiyo laba meelood oo isle'eg adigoo isticmaalaya kambas iyo mastarad.

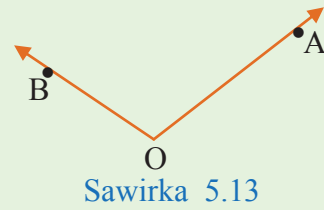
5.2.1 XAGLAHA

Hawlgalka 5.4



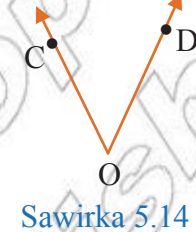
- 1 Qaado laba falaadhood is dul dhig labada falaadhood, ka soo qaad in midi ku wareegayso bar dhamaadka L, takalana ay taagan tahay.
 - b** inta ayna kala furnaan miyuu kordhayaa marka fallaadha L wareejinayaan, madashu meeshii ay ahayd?
 - t** intee in le'eg ayay kala furan yihiin marka fallaadha la wareejinayaa, ay ku qotonto fallaadha aan la dhaqaajinayn.
 - j** intee in leeg ayay kala furan yihiin marka labada falaadhood ay si iska horjeed ah iskugu toosan yihiin.
 - x** intee in leeg ayay kala furan yihiin marka ay falaadhu soo samayso wareeg buuxa ee ay halkeedii ku soo noqoto?
- 2 Miyuu jiraa magac uu leeyahay inta labada falaadhood ay kala furan yihiin?

3 Bixi tusaale nololmaamlmeedkaaga la xidhiidha oo la mid ah inta falaadhuhu kala furnaayeen sida su'aasha (1) hawlgalka aan halka sare kusoo aragnay waxay ku siinaysaa fikradaha ku saabsan xagal. Xagal waa inta laba falaadhood ay kala furan yihiin ee u dhaxaysa, taasi oo ay ku kulmaan bar.



Falaadhaha sameeya xagal waxaa la yidhaahdaa gacmaha xagasha (dhinacyada) barta ay iskugu yimaadaana waxaa la yidhaahdaa geeska. **Sawirka 5.13** BOT waa xagal.

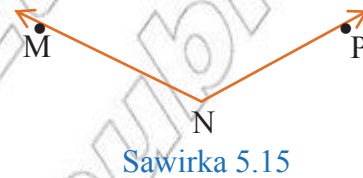
Tusaalaha 1^{aad}: Sawirka 5.14 OC iyo OD, waa laba falaadhood oo ku kulma barta O, haddaba COD waa xagasha ay OC iyo OD ay yihiin gacmihiisa O, tahay geeskiisa waxaajira siyaabo kala duwan oo loo magacaabo xagasha.



Qaar ka mid ah waa:

1 Haddii ay jirto xagal qudha geeska lagu siiyay. Xarafka ku qoran ayaa noqon kara magaca xagasha.

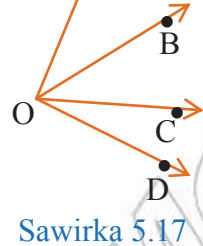
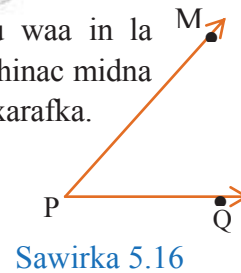
Tusaalaha 2^{aad}: Magacow xagasha **sawirka 5.15**



Furfures: maadaama oo ay jirto xagal kali ah oo ka samaysan geeska N, xagasha waxa lagu magacaabi karaa N ama $\angle N$ ama N.

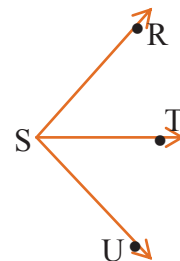
2 Habka ugu caansan ee lagu magacaabi karo xagashu waa in la isticmaalo saddex xaraf oo ay laba yihiin kuwa labada dhinac midna badhtanka la dhigayaana tahay xarafka ku qoran geeska xarafka.

Tusaalaha 3^{aad}: aan tixgalino xagasha ka muuqata **sawirka 5.16**, xagashan waxa lagu magacaabi karaa sida $\angle MPQ$ ama $\angle MPQ$ ama $\angle MPQ$.



Ogow: marka ay jiraan in ka badan hal xagal ah oo ka samaysma hal gees oo qudha magaca xagasha waxaa u taagnaa saddex xaraf, halkii lagu qori lahaa xarafka geeska ku qoran **sawirka 5.17** ee xagga midigta waxaa jira xaglo badan oo ka samaysma geeska O, haddii loo bixini magaca xaglaha xarafka ku qoran geeska waa lagu wareeri.

Tusaale: $\angle AOB$ iyo $\angle COB$ waa laba xaglood oo kala duwan oo ka samaysma geeska O, sidaas daraadeed haddii loo bixiyo xaglahan $\angle O$ waa qalad.



Tusaalaha 4^{aad}: **Sawirka 5.18**, imisa xaglood ayaa ka samaysma geeska S? tax dhamaantood

Saddex xaglood ayaa ka samaysma S, xaglahanina waa $\angle RSU$, $\angle RST$ iyo $\angle TSU$.

- 3 Sidoo kale waa iska caadi si xaglaha loo cadeeyo in la isticmaalo xarfaha yar-yar ee Afsoomaaliga sida b, t, j, x, y, IWM, xarfaha giriiga sida $\alpha, \beta, \theta, \delta, \gamma, \epsilon \in$ IWM. Tirooyin sida 1, 2, 3-----iwm.

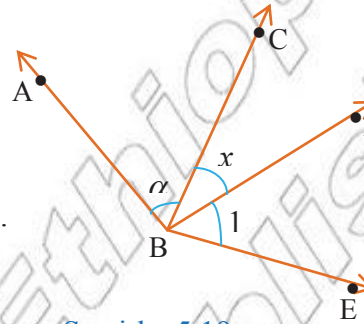
Summadaha xarfaha giriiga	α	β	γ	θ	δ	ϵ
Sida loo akhriyo	Alfa	beta	gaama	tiita	dhelta	Ibsiloon

Tusaalaha 5^{aad}: Sawirka 5.19, $\angle ABC$

Waxaa kale oo lagu magacaabi karaa

Sida X, $\angle CBD$ waxaa lagu magacaabi

Karaa X, $\angle DBE$ waxaa lagu maragaabi karaa 1.



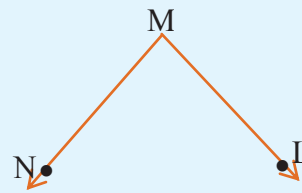
Sawirka 5.19

LAYLIKA 5.4

- 1 Sawirka 5.20 waa kuwee/kee

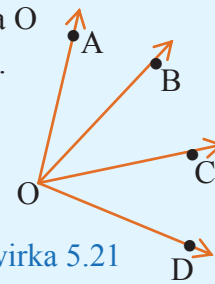
b gacmaha (dhinacyada) $\angle NML$?

t geeska xagasha $\angle NML$?



Sawirka 5.20

- 2 Sawirka 5.21, tax dhammaan xaglaha ka smaysma geeska O adigoo isticmaalaya habka ugu haboon ee loo magacaabo.



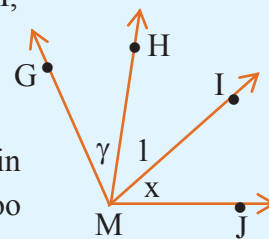
Sawirka 5.21

- 3 Sawirka 5.22

b qaado xagal kasta oo ka samaysanta geeska M, dabadeed magacow gacmaheeda iyo geeska.

t tax dhamaan xaglaha ka samaysma M

j miyaad xaglaha M ka samaynaysaa u bixin kartaa xagasha kale ee r loo bixin karaa? X loo bixin karaa? loo bixin karaa?



Sawirka 5.22

5.2.2 CABBIRADA IYO NOOCYADA XAGLAHA:

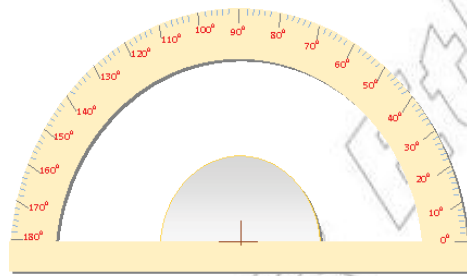
Hawlgalka 5.5



- 1 Qalabkee ayaad ku cabbiri dhererka xariijinta?
- 2 Miyuu jiraa qalab aad taqaan oo lagu cabiraa xaglaha? Maxaad u taqaan?
- 3 Waa maxay halbeega salka u ah xagashu?

Xagal- cabiruhu (borotaraktor) waa qalabka ugu haboon ee lagu cabiro xagasha waa goobo badh leh meelo u qaybsan 180 meelood oo isleeg oo la yidhaahdo darajooyinka goobo qaabilka (digrii). Xudunta goobo badhka waxaa lagu calaamadeeyaa dhbic.

Sida loo cabiro xagal

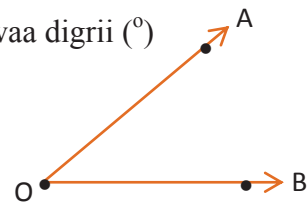


Sawirka 5.23

Dul-dhig xagal cabiraha xagasha dusheeda, taasoo xudunta lagu aadinayo geeska xagasha, halka eberku ku qoran yahayna waxaa lagu aadin dhinac ka mid ah dhinacyada xagasha, meesha kale ee ama barta kale ee dhinaca kale ee xagashu halka uu halbeega kaga beegan yahay waa inta digrii ee xagashu tahay.

Xagal cabiraha (protractor) waxaa kale oo loo isticmaali karaa.

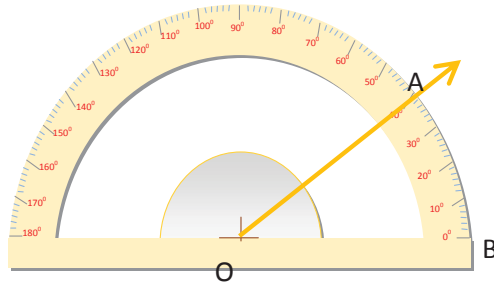
- In xaglaha lagu sawiro
- In xaglaha laysugu bar bar dhigo
- Halbeega caadiga ah ee lagu cabbiro xagluhu waa digrii ($^{\circ}$)
- Haddii goobada loo qaybiyo 360 qaybood oo isleeg oo mid ka mid ah bar-dhammaadkeeda lagu xidho xudunta ayadoo la isticmaalayo xariiq toosan, dabadeed xagasha ka samaysanta xuduntu waa 1° .



Sawirka 5.24

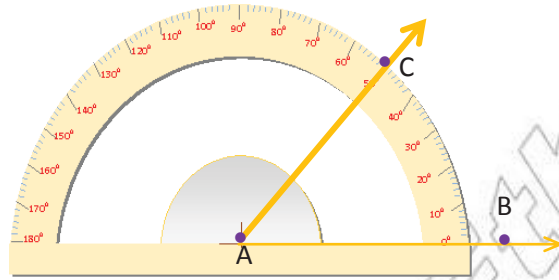
Tusaalaha 6^{aad}: cabbir $\angle AOB$ adigoo isticmaalaya xagal-cabbire.

Furfuris: si loo cabbiro xagal dul-dhig xagal cabbiraha xagasha ee O. dabadeed meesha eberku ku qoran yahay waxaa la dul dhigi dhinaca OB. Barta dhinaca OA kaga beegan yahay xagal cabbiraha ayaa ah cabbirka xagasha,.



Sawirka 5.25

Tusaalaha 7^{aad}: Sawirka xagasha 50° , adigoo isticmaalaya xagal cabbir.



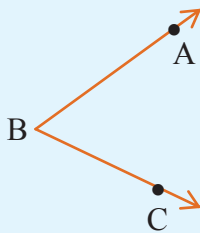
Sawirka 5.26

Furfuris: Marka u horaysa sawir fallaadha AB, dabadeed xudunta xagal-cabiraha waxaad dul-dhigtaa barta A, salkana ku beeg dhinaca AB. Dabadeedna akhri halka ay ku beegan tahay 50° , kuna magacow C, dabadeedna isku xidh AC, $\angle CAB$ waa xagasha cabbirkeedu yahay 50° .

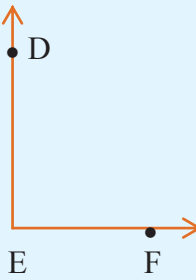
LIYLISKA 5.5

1 Adigoo isticmaalaya xagal cabbire cabbir xagal kasta oo soo socota

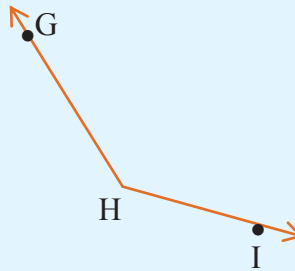
b



t



j



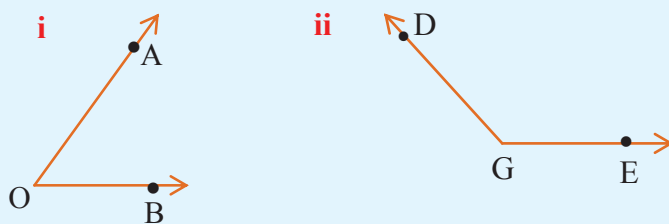
x



2 Sawir xagal kasta oo ka mid ah xaglahan soo socda, adiga oo isticmaalaya xagal cabbire.

b 180° **t** 30° **j** 60° **x** 90° **kh** 120° **d** 45°

- 3** Cabbir xagal kasta oo ka mid ah kuwan soo socda, adigoo isticmaalaya xagal cabbire, isbarbar dhigna.



Sawirka 5.28

- b** xagashee ayaa wayn? $\angle AOB$ ama $\angle DGE$?
t waa faraqa u dhexeeya xagasha wayn iyo xagasha yar.

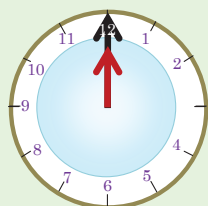
Noocyada xaglaha (kala saarida xaglaha)

Qaybta waxaan ku baran doonaa siyaabaha kala duwan ee loo kala saaro xaglaha.

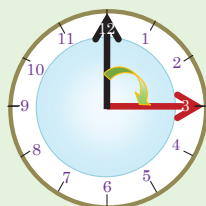
Hawlgalka 5.6



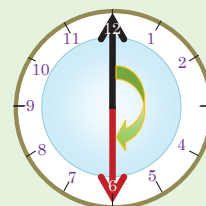
- 1** **b** aan qaadano sawirka 5.29, (b) ee saacada haddii gacanta saacada iyo gaacanta miridhku labaduba ay sheegayaan 12, waa immisa xagasha u dhaxaysa labada gacmood.
t sawirka 5.29 (t) haddii gacanta tirisa miridhku wareegto ayadoo ku tagaysa 12, takalana 3 halka gacanta saacadu ay joogto 12, waa imisa xagasha u dhaxaysa labada gacmood?.
j sawirka 5.29 (j) haddii gacanta miridhka tirisaa ay sheegayso 6 ta saacada sheegtaana wali joogto 12, waa imisa xagasha u dhaxaysa labada gacmood?
x waa imisa haddii miridh tirisadu wareegto wareeg buuxa, waa imisa xagasha u dhaxaysa labada gacmood?
- 2** Imisa ayuu noqon cabbirka xagashu, haddii gacanta miridh tirisadu.
b Wareegto inta u dhaxaysa
i 12 iyo 3? **ii** 12 iyo 6?
t inta ayna samayn wareeg buuxa ay ka bilaabanto 12?



b



t



j

Sawirka 5.29

- Haddii laba fallaadhood oo bar-dhammaad wadaagaa ay isku dul-dhacaan, dabadeed xagasha ka samaysanta dhexdooda waxaa la yidhaa xagal eber ah. Cabbirka xagasha eberka ahi waa 0° .

- Xagasha ka samaysanta laba fallaadhood oo isku qotoma dhexdooda waxaa la yidhaa xagal quman cabbirka xagasha qumani waa 90° .
- Xagasha ka samaysanta laba fallaadhood oo wadaaga bar dhammaad una kala jeeda labada dhinac ee iska soo horjeeda dhexdooda waxaa la yidhaahdaa xagal toosan. Xagasha toosan xabbirkeedu waa 180° .
- Xagal dhammaystirani waa xagasha marka fallaadha la wareejiyo, wareeg dhamaystiran, cabbirka xagasha dhamaystirani waa 360° .

Xagalsha kale ee u dhexeeya 0° iyo 360° waxaa loo kala soocaa sidan soo socota.

Cabbirka xagasha	Magaca xagasha	
$0^\circ < \theta < 90^\circ$	Xagal fiiqan	
$90^\circ < \theta < 180^\circ$	Xagal daacsan	
$180^\circ < \theta < 360^\circ$	Xagal-dhacsan	

Ogow: maadaama oo uu xagal-cabbiraha uu leeyahay halbeegyo (tirooyin) u dhexeeya 0° ilaa 180° sawirida iyo cabbirada xaglaha ka wayn 180° , way adagtahay in lagu cabbiro xagal-cabbire.

Xaaladan waxaan u sawiraynaa ama cabiraynaa xaglaha ka wayn 180° labadan tallaabo ee soo socda.

Tallaabada 1^{aad}: waxaan sawiraynaa ama cabiraynaa xagal ah 180° inagoo isticmaalayna xagal-cabire

Tallaabada 2^{aad}: sawir ama cabbir xaglaha hadhay adigoo ka bilaabaya bar dhamaadka hadhay, adigoo ka bilaabaya bar-dhamaadka fallaadhaha 180° , dabadeed isu-gee xaglaha talaabada 1 iyo 2 tani ayaa ah xagasha ka wayn 180° .

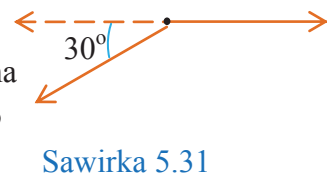
Tusaalaha 6^{aad}: sawir 210° adigoo isticmaalaya xagal-cabbire.

Furfuris:

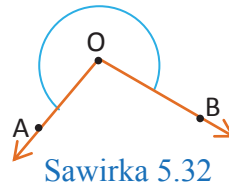


Tallaabada Kowaad: sawir xagal cabbireedu yahay 180° .

Tallaabada Labaad: dhinaca dhammaadka 180° adoo ka bilaabaya sawir xagal la mid ah $210^\circ - 180^\circ = 30^\circ$, dabadeed 210° waa xagasha ka samaysanta bar bilawga fallaadha 180° iyo bar-dhamaadka fallaadha 30° .

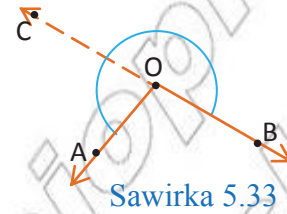


Tusaalaha 7^{aad}: cabbir xagasha sawirka 5.32?



Furfures:

Tusaalaha 1^{aad}: cabbir xagasha 180° ee ka timaada OB. Ka soo qaad in OC ay tahay fallaadh dhammaadka 180° .



Tusaalaha 2^{aad}: cabbir xagasha hadhay ee ka bilaabanta dhammaadka dhinaca OC ee 180° ilaa OA, dabadeed cabbir xagal noqodka $BOA = 200^\circ$.

SHAQO KOOXEEDKA 5.3



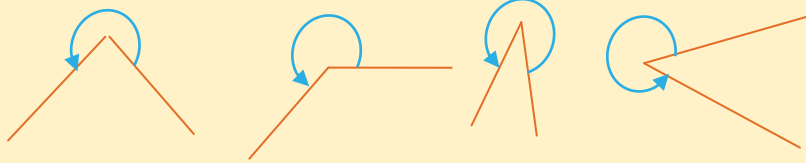
1 Cabbir mid kasta oo ka mid ah xagalahan soo socda adigoo adeegsanaya xagal-cabbir.

b

j

t

x



2 Sawir mid kasta oo ka mid ah xaglaha adigoo isticmaalaya xagal-cabire.

b 189°

t 210°

j 330°

x 350°

LAYLIKA 5.6

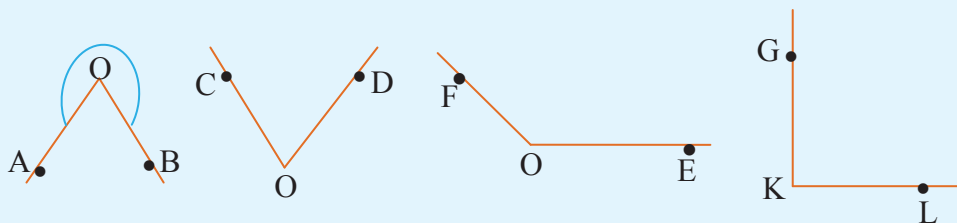
1 Adigoo cabiraya midkasta oo ka mid ah xaglaha soo socda, kala saar.

b

t

j

x



2 Adigoo dhigaya callaamad (/) buuxi shaxdan.

xagal	Xagal fiiqan	Xagal daacsan	Xagal dhacsan
110°			
63°			
142°			
233°			
189°			
129°			
78°			
179°			
200°			

3 U Kala saar mid kasta oo ka mid ah xaglahan soo socda, xagal fiiqan, daacsan iyo noqod (mid ka wayn 180°).

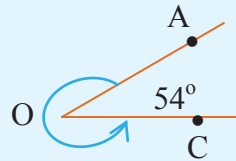
- b** 12° **t** 79° **j** 184° **x** 1°
kh 225° **d** 359°

4 haddii ∠BDCna ay tahay xagal quman, xagal noocce ah ayay noqon wadarta ∠AOC iyo ∠BDC?

5 **b** waa Imisa cabbirka xagasha ka samaysanta gacanta miridh tirista, hal saac gudaheed?

t waa imisa cabbirka xagasha ka samaysanta gacanta miridh tirista 30 miridh?

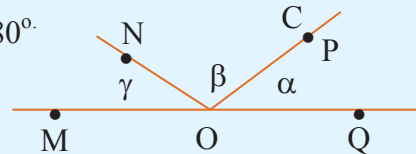
6 Raadi cabirka xagal noqodka (xagasha ka wayn 180°) ee ∠AOC.



Sawirka 5.36

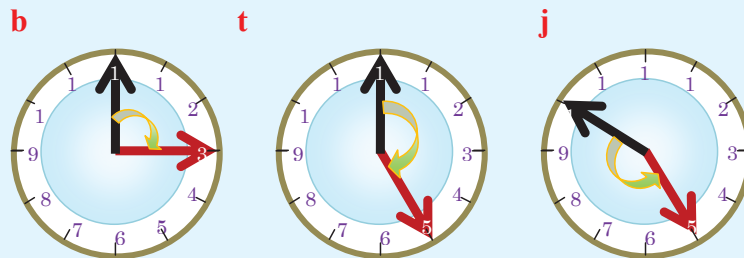
7 Sawirka 5.37 haddii X = 40°, B = 60° iyo = 80°.

- b** waa nooca xagasha ∠POQ?
t waa nooca xagasha ∠NOQ?
j waa nooca xagasha ∠QOM?



Shawirka 5.37

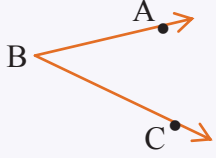
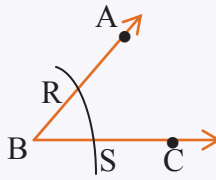
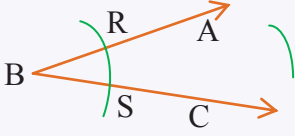
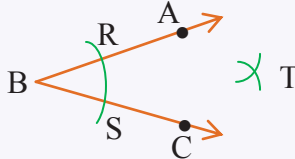
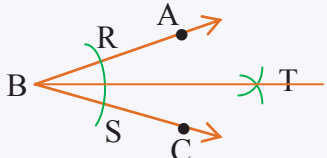
8 Cabbir xagalaha u dhexeeya gacmaha saacada mar kasta.



Sawirka 5.38

5.2.3 U QAYBINTA XAGLAHA LABA MEELOOD OO ISLE'EG

Halkan tusmo hoosaadkan waxad ku baran doontaa sida xaglaha loogu qaybiyo laba meelood oo isleeg, adigoo isticmaalaya kombas iyo mastarad, tallaabooyinkan. Waxaa lagu soo koobay shaxdan.

<p>Tallaabada 1^{aad}: sawir xagal cabbirkeedu intuu doono yahay.</p>	
<p>Tallaabada 2^{aad}: dul-dhig kombaska geeska B iyo inta aad doonto gacan leeg sawir goobo gobol, si ay u kulmaan BA iyo BC labada barood ee R iyo S.</p>	
<p>Tallaabada 3^{aad}: dul dhig kombaska barta R furna gacanka qiyaas caadi ah sawir goobo goobo ku dhex jirta gacmaha xagasha.</p>	
<p>Tallaabada 4^{aad}: gacan isku mid ah sawir goobo xudunteeduna tahay S, si ay ugu kulmaan kii hore barta T.</p>	
<p>Tallaabada 5^{aad}: isku xidh geeska iyo barta T adigoo isticmaalaya fallaadh, haddaba BT waa xagal-badhaha xagasha $\angle ABC$.</p>	

Ogow: BT taas oo u qaybisa $\angle ABC$ laba xaglood oo isleeg $\angle ABT$ iyo $\angle TBC$ ayaa ladhahaa xagal badhaha xagasha $\angle ABC$.

SHAQO KOOXEEDKA 5.4

Sawir xagal cabbirkeedu yahay 150° , dabadeed laba xaglood oo isleeg u qaybi adigoo isticmaalaya kombas iyo mastarad.



LAYLIKA 5.6

1 Sawir xaglahan soo socda, laba isleegna u qaybi adigoo isticmaalaya kombaska iyo mastarad

b 30°

t 90°

j 110°

2 Laba isleeg u qaybi xaglahan adigoo isticmaalaya kombas iyo mastarad, adigoo ku guurinaya buugaaga qorista.



Sawirka 5.39

3 Dhis 90° adigoo isticmaalaya kombas iyo mastarad, dabadeedna laba isleeg u qaybi.

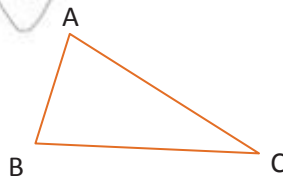
5.3 NOOCYADA SADDEXAGALADA

Hawlgalka 5.7



- 1 Sawir saddexagal soona goo warqada aad ku sawirtay.
- 2 Imisa dhinac ayuu leeyahay saddexagalka aad sawirtay? Imisa gees ayuu leeyahay? Imisa xaglood ayaa ka samayni kara geesaha saddex xagalka?
- 3 Side ayaad u magacaabi saddexagalkaaga?
- 4 Saddex xagalada ma waxaad ku kala saari kartaa dhererka dhinacyadooda? Mise waxaad ku kala saari kartaa cabbirka xaglahooda?

Saddex xagal waa geesole leh saddex dhinac wuxuu leeyahay 3 xaglood iyo bed xidhan. Saddex xagalka waxaa loo bixiyaa xarfaha geesahiisa ku qoran. Tusaale ahaan haddii A, B iyo C, ay yihiin geesaha saddex xagal lagu siiyay, dabadeed waxaan u bixinaynaa ABC. Waxaan loo akhriyaa saddex xagalka ABC.



Sawirka 5.40

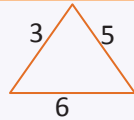
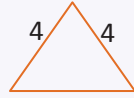
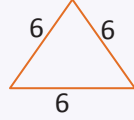
SHAQO KOOXEEDKA 5.5



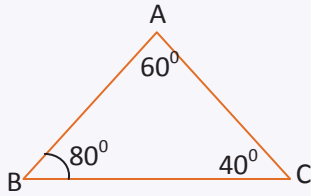
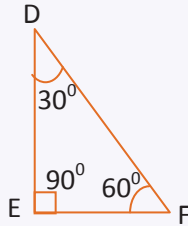
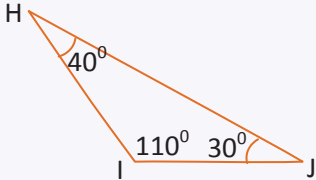
Haddii P, Q iyo R ay yihiin geesaha saddex xagal lagu siiyay, u magacow saddex xagalka siyaabo kala duwan, adigoo isticmaalaya xarfaha P, Q iyo R.

Saddex xagalada waxaa lagu kala soocaa marka loo eego dhererka dhinac yadooda ama cabirka xaglahooda.

i Marka aan kala soocayno saddex xagalada inagoo eegayna dhinacyadooda.

Magaca saddex xagalka	dhinacyada	Tusaale
Saddexagal aan isleekayn	Ma jiraan laba dhinac oo isku mid ahi.	
Saddexagal labaale ah	Ugu yaraan laba dhinac ayaa isku mid ah, labada dhinac waxaa la yidhaa lugaha, dhinaca saddex xagalada waxaa la yidhaa salka.	
Saddexagal siman	Dhammaan dhinacyadiisu waa isku mid	

ii Marka aan kala soocayno saddex xagalada inagoo eegayna cabbirka xaglahooda.

Magaca saddex xagalka	xaglaha	Tusaale
Saddexagal xagal fiiqan leh.	Dhammaan saddexdiisa xagalood waa xaglo fiiqan	
Saddexagal xagal quman leh	Xaglihiisa mid ka mid ah ayaa xagal quman ah.	
Saddexagal xagal daacsan	Xagal ka mid ah saddex diisa xagalood ayaa daacsan.	

SHAQO KOOXEEDKA 5.6



- 1 Ku sawir ama dhis saddex xagalo kala duwan adigoo adeegsanaya warqad, dabadeed soo goo oo cabbir xagal kasta, dabadeed isu gee cabbirka saddexda xaglood. Imisa ayay noqon wadarta saddexda xaglood? Tani ma sax bay ku tahay saddex xagal kasta oo aad sawirtay ama dhistay?
- 2 Sawir (dhis) saddex xagal xaglihiisu leegyihiin dhammaantood? Ma isku midbaa? Waa imisa cabbirka xagal kastaa?
- 3 Saddex xagalka simani ma labaalaa? Labaalayaashu ma saddex xagal simanbaa?
- 4 Saddex xagalku miyuu yeelan karaa in ka badan hal- xagal oo quman? In ka badan hal xagal oo fiiqan? waayo?
- 5 Saddex xagal miyuu noqon karaa saddex xagal aan isleekayn iyo mid leh xagal fiiqan labadaba? Mid aan isleekayn iyo mid leh xagal quman? Mid aan isleekayn iyo mid leh xagal daacsan?
- 6 Saddex xagal labaale ahi miyuu noqon karaa saddex xagal leh xagal quman?
- 7 Saddex xagal siman miyuu noqon karaa saddex xagal leh xagal quman? Saddex xagal leh xagal daacsan? Saddex xagal leh xagal fiiqan?.
- 8 Haddii laba xaglood oo saddex xaglood yihiin 30° iyo 50° , saddex xagalku waa noocee?

Astaamaha Saddexagalka

Wadarta cabbirka xaglaha saddexagal waa 180° .

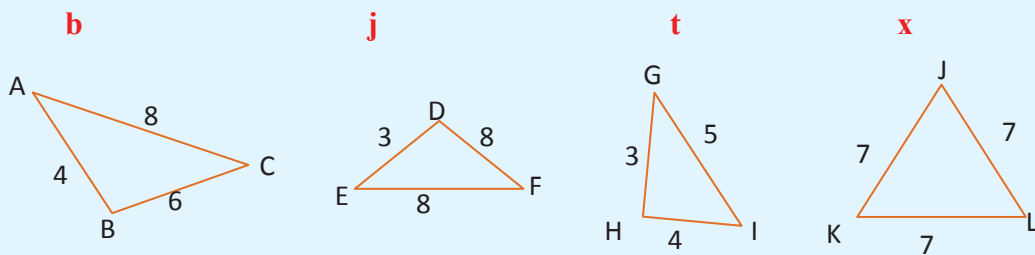
LAYLIKA 5.7

- 1 Waxaa lagu siiyay xagal hoose dhererka dhinacyada saddexagalada. Adigoo qiimayashan ku salaysanaya magacow saddexagal sida:
Mid aan isle'ekayn, mid labaadle ah iyo saddexagale siman.

b 3, 5, 7	t 4, 4, 6	j 2.5, 3, 4.2
x 5, 5, 5	kh 6, 7, 8	d 10, 20, 15.
- 2 Xagga hoose waxaa lagu siiyay cabbirka xaglaha saddexagalada. Adigoo ku salaynaya cabbiradan. Magacow saddexagalada sida: saddexagal leh xagal fiiqan, leh xagal quman mid leh xagal daacsan.

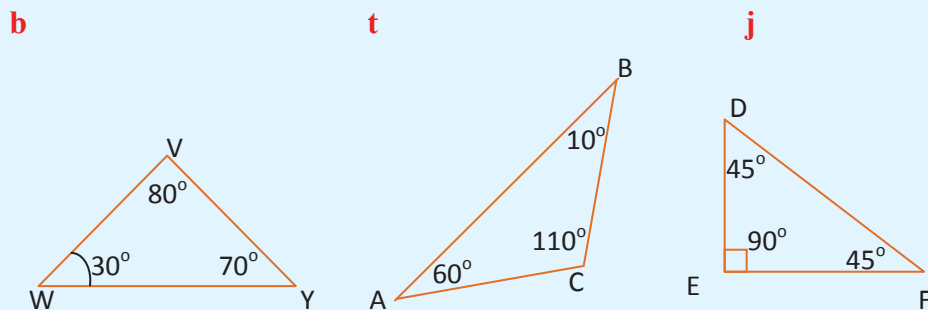
b $20^\circ, 10^\circ, 150^\circ$	t $40^\circ, 60^\circ, 80^\circ$	j $26^\circ, 72^\circ, 82^\circ$
x $50^\circ, 50^\circ, 90^\circ$	kh $5^\circ, 35^\circ, 140^\circ$	

- 3** Sawirada saddex xagalada iyo dhinacyadooda hoos lagu siiyay kala saar noocyadooda.



Sawirka 5.41

- 4** Haddii laba xaglood oo saddex xagal yihiin 90° iyo 30° waa imisa xagasha 3^{aad}?
- 5** Sawirada saddex xagalada iyo cabbirka xaglahooda ee hoos lagu siiyay adigoo isticmaalaya kala saar noocyada saddex xagalada.



- 6** Haddii hal xagal ah ee saddex xagal tahay 80° . Raadi wadarta labada xaglood ee kale?
- 7** Cabbirada xaglahani miyay u taagnaan karaan xaglo saddexagal?

b	$50^\circ, 89^\circ, 122^\circ$	t	$45^\circ, 45^\circ, 45^\circ$	j	$25^\circ, 25^\circ, 25^\circ$
x	$100^\circ, 40^\circ, 40^\circ$	kh	$110^\circ, 30^\circ, 40^\circ$		

5.4 XARIIQYADA WANQARKA (XARIIQYADA LABA MEELood oo ISLEEG u QAYBIYA WAX AMA SAWIRADA)

Waxyaalaha inagu wareegsan waxaa ka buuxa waxyaalo badan oo wanqaran (laba isleeg u qaybsan).

Tusaale ahaan u baxyadu waxay leeyihiin ubaxyo laba meelood oo isleeg u qaybsan. Dhagaha geeduhu waxay u habaysan yihiin si wanqaran, laba meelood oo isleeg ah. Sawiro joomatari oo kala duwani waxay leeyihiin xariiqyo laba meelood oo isleeg u qaybiya. Adduunka waxaa ka buuxa waxyaalo badan oo wanqaran.

Waa kuwee kuwa laysla yaqaan ee wanqaradu (walxaha labada meelood ee isleeg u qaybiyaa).

Hawlgalka 5.8



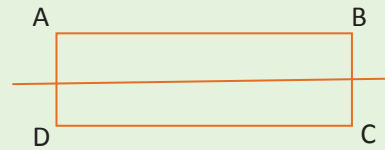
- 1 Aan qaadano caleenta (dhagta dhirta). Isku lab adigoo isaga laabaya xariiqda badhtanka, maxaa ku dhici qaybta dhagta marka aad isku laabto dhagta? Miyay qaybta kale dul buuxinaysaa qaybta la ilaaliyay?



Sawirka 5.43

- 2 Aan tixgalino

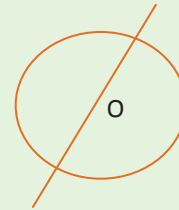
Laydiga $\square ABCD$, isku laab xariiqda isku xidha bar-badhtanka AD iyo BC, maxaa ku dhici qaybta sare iyo qaybta hoose ee laydiga?



Sawirka 5.44

Miyay dhammaan is dul buuxinayaan marka laysku laabo? D halkee ayay ku dul dhici? C halkee ay ku dul dhici?

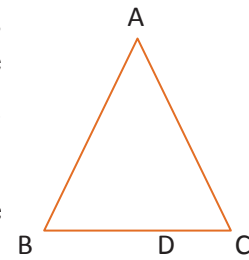
- 3 Aan tixgalino goobo xudunteedu tahay O. isku laab mid ka mid ah dhexrooradiisa maxaa ku dhici qayb ka mid ah goobada? Miyay dul-buuxin labada dhinac? Halkee ayay dhici xudunta goobadu marka laysku laabo?



Sawirka 5.45

Qaado saddex xagalka labaalaha ah ee ABC halka $AB = AC$, dabadeed isku lab, waxaanad isaga laabtaa xariiqda AD ee labada isleeg u qaybisa saddex xagalka, kuna qotonta BC, maxaa ku dhici saddex xagalka?

Labada dhinac saddex xagalku miyuu isku dhul dhici? Halkee ayay B dhici ayaad u malayn? AB miyay ku dul-dhici doontaa A C dhamaanteed? Miyuu jiraa xariiq kale oo aan ahayn A D kaasoo saddex xagalku dhammaan iska dul dhacayo?



Sawirka 5.46

Hawlgalka xaga sare ku xusani wuxuu si cad kaaga caawin doonaa in aad fahanto, waxa xariiqda laba meelood oo isleeg u qaybisa (wanqarku) yahay iyo wanqarada sawirada joomaratiga.

Tusaale ahaan: haddii aad isku laabto dhagta caleenta ee su'aasha (1) aadna isaga laabto xariiqda marta badhtamaha, waxaad dhammaan labada dhinac ee dhagta caleentu way isku dullaabmayaan. Sidaas darteed xariiqda badhtanka martaa waa xariiqda wanqarka ee dhagta caleenta. Dhagta caleentuna waxay ku wanqaran yihiin xariiqda marta badhtanka.

Sidaas si la mid ah, haddii aad isku laabto saddex xagal labaale ah su'aasha (4) waxay ku saabsan tahay AD, qaybta saddex xagalku waxay dhammaan ku dul dhacaan dhinaca kale haddaba saddex xagalku wuxuu ku wanqaran yahay \overline{AD} . \overline{AD} waxaa loo yaqaanaa dhidibada wanqarka ee saddex xagalka.

GUUD AHAAN:

Sawir joomatari waxaa la odhan karaa wuxuu ku wanqaran yahay xariiqda lagu siiyay ee ℓ haddii sawirka qaybi, qaybta kale dul buuxiso marka laysku laabo, iyadoo laysaga laabayo xariiqda ℓ dabadeed xariiqda ℓ waxaa la dhahaa xariiqda wanqarka ama dhidibka wanqarka.

Tsaalaha 1^{aad}: imisa xariiqood oo laba meelood oo isleeg u qaybiya ayay leedahay E?

Furfures: waxay leedahay hal xariiq oo laba meelood oo isleeg u qaybiya

Tusaalaha 2^{aad}: midkee ayaa sawiradan soo socda aan lahayn wanqar (xariiq laba meelood oo isleeg u qaybisa)?



Sawirka 5.47

Furfuris:

t malaha dhidib laba meelood oo isleeg u qaybiya (wanqar).

LAYLIKA 5.8

- 1** Ku sawir saddex xagalo siman oo kala duwan waraaq dusheed dabadeedna, goo barta wanqaradooda. Imisa dhidib wanqar ayay saddex xaglada simani leeyihiin? Tus wanqar kasta oo saddex xagal siman oo kastana leeyahay?
- 2** Ku sawir laba jibbaarane warqad dusheeda dabadeedna goo, barana wanqaradiisa. Imisa dhidibo wanqar ayuu leeyahay laba jibbaarane kasta?

- 3 Ku sawir laydi warqad, goo tusna dhammaan dhidibadiisa wanqarka, imisa dhidibo wanqar ayuu yeelan doonaa laydigu?
- 4 Sawir goobo, tusna dhidibadeeda wanqarka. Imisa dhidibo wanqar ayay yeelan kartaa goobadu? laba? saddex? Inbadan?
- 5 Adigoo isticmaalaya aqoonta aad u leedahay wanqarada, xarfaha waawayn ee luuqada ingiriisiga keebaa leh:
 - b dhidib wanqar jiifa?
 - t dhidib wanqar taagan?
 - j dhidib wanqar jiifa iyo ku taagan labadaba?

Astaamaha dhidibada wanqarka

Waxaad taqaanaa isbadalka ku dhaca muuqaalka walax marka humaageeda ay samayso noqodka muraayada sallax. Aan fiirino xidhiidhka ka dhex dhaca humaaga walax ay samaysay muraayada sallax iyo walax ku wanqaran walax kale.

SHAQO KOOXEEDKA 5.7



- 1 Waraaq dusheed ku sawir taad doonto dhig xarfka P ka soo horjeedka xariiqda meel u jirta fogaanta ay doonto, dheh 3sm.



Sawirka 5.48

- 2 Dhig muraayad sallax xariiqda L ee ku qotonta sallaxa ay xariiqdu ku taalo, qiime (fiiri) humaaga walaxda ay samaysay muraayadu.
- 3 Isbarbar shig humaaga walaxda ee muraayadu samaysay iyo walaxda labada meelood ee isleeg u qaybisay xariiqda (wanqarka) miyuu humaaga muraayadu samaysay la mid yahay walaxda xariiqdu labada meelood ee isleeg u qaybisay?
- 4 Maxaad ku gabagabayn lahayd? Hawlgalka aan xaga sare ku soo samaynay waxaa lagu gabagabayn karaa sidan soo socota.

Humaaga walaxeed ee ay samayso muraayad sallax oo dul dhigay xariiqda ku qotonta sallax xariiqdu dul martaa wuxuu la mid yahay wanqarka ay qaybiso xariiqdan (laba meelood oo isleeg).

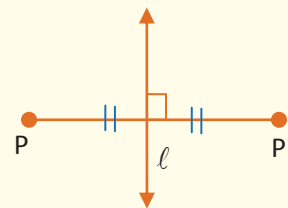
Hawlgalka 5.9



- 1 Qaado laydi quman oo laga soo gooyay warqad, dabadeed isu lab, adigoo isaga laabaya dhererkiisa,
 - b** qaado laba barood oo kasta oo ku dul dhaca laabiga dushiisa, siina magacda A, B iyo C.
 - t** ku mud caarada hore ee kombaskaaga saddex (barood)meelood oo kala duwan oo warqada dusheeda ah. Ka soo qaad in barahani ay kaga beegan yihiin dhinac kale ee laydiga, A' iyo B', iyo C',
 - j** laydi aan isku laabmayn, ku sawir xariiq marta xariiq ku began meesha laga laabo laydiga.
 - x** ku xidh A iyo A', B iyo B' iyo C iyo C', adigoo isticmaalaya mastarad.
 - kh** ka soo qaad AA', bb' iyo CC' inay ka jaraan xariiqda E, F, G, siday isugu xigaan.
- 2 Cabbir
 - b** AE iyo EA'
 - t** BF iyo FB'
 - j** CG iyo CG', barbardhig lamaane kasta. maxaad ogaatay?
- 3 Adigoo isticmaalaya xagal-cabbire, xagal kasta oo ka samaysanta lammaanayaasha dhexdooda.
 - b** □ iyo AA' **t** □ iyo BB' **j** □ iyo CC'
- 4 Su'aalaha 2 iyo 3 waa maxay gabagabada muhiimka ah ee ku saabsan dhidibada wanqarka ah ee aad ku gabagabaynaysa?

Hawlgalka xaga sare ku xusan, waxaan ku gabagabaynaynaa sidan soo socota.

- ✓ Haddii P iyo P' ay yihiin laba barood oo wanqar oo uu leeyahay xariiq l , dabadeed.
- ✓ l waxay ku qotontaa PP'.
- ✓ l waxay laba isleeg u qaybisaa PP'

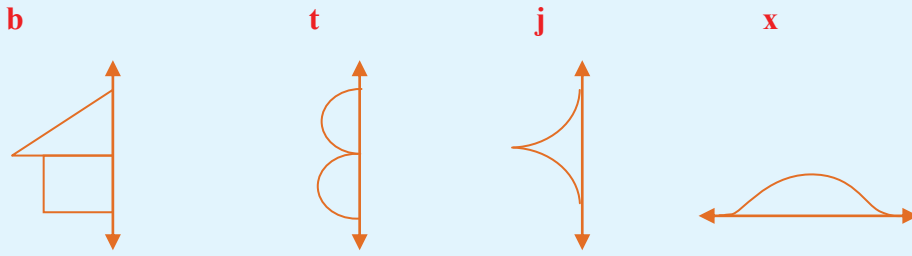


Sawirka 5.49

Si kooban dhisibada wanqarku waa kala qaybiye ku qotoma xariijinta isku xidha barta iyo humaageeda.

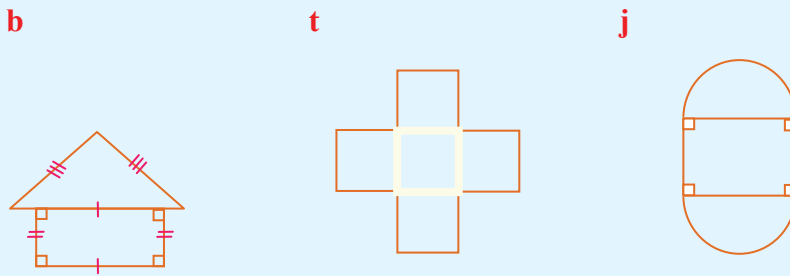
LAYLIKA 5.9

- 1 Kuwan soo socda mid kasta oo ka mid ah, waxaad ka soo qaadaa in sawiradu (shaxanadu) ay ku wanqaranyihiin xariiqda, dhamaystir humaagyada.



Sawirka 5.50

- 2 Imisa dhidib wanqar ayay mid kasta oo ka mid ah shaxanadan soo socdaa yeelan karaan.



Sawirka 5.51

- 3 Labada barood ee R iyo S waxay ku wanqaran yihiin xariiqda L, hadii RS ay yihiin 30sm, L intee in leeg ay ka fogtahay dhinac dhammaadka xariijinta isku xidha R iyo S.
- 4 Haddii L ay tahay dhidibka wanqarka labada barood ee M iyo N taasoo fogaanta M iyo L ay isku jiraan ay tahay 13sm, intee ayay N u jirtaa L ?
- 5 Isku aadi mid kasta oo ka mid ah shaxanada soo socda iyo tirada dhidib wanqar ee ay leeyihiin.

Shaxan

Tirada dhidib wanqar

i	Laba jibbaarane	b	3
ii	Laydi aan ahayn laba jibbaarane	t	5
iii	Saddex xagal siman	j	in badan
iv	Saddex xagal labaale ah oo aan ahayn Saddex xagal siman	x	4
		kh	2
v	Goobo,	d	1

Dhisida dhidibka labada meelood ee isleeg u qaybiya laba barood (wanqarka)

Marka laba barood lagu siiyo, sida ayaan u dhisi karnaa dhidibka labada meelood ee isleeg u qaybiya adigoo isticmaalaya kombas iyo mastarad? Jawaabta waxaa lagala soo bixi karaa astaamaha dhidibada wanqarka, maadaama oo dhidibka wanqarka laba barood uu yahay dhidibka xariiqda labada barood, isku xidha ku qotoma ee labada isleeg u qaybiya.

Dabadeed waan dhisi karnaa dhidibka wanqarka, inagoo dhisayna xariiqda ku qotonta ee labada meelood ee isleeg u qaybi 20sm. a xariiqda isku xidha labada barood. Laakiin waan soo baranay sida loo sameeyo xariiq ku qotonta xariijin lagu siiyay adigoo isticmaalaya kombas iyo mastarad qaybtii 5.1.2. sidaasi darteed waxaan u sawirayaa dhidibada wanqarka ee laba barood sidii hore si la mid ah.

LAYLIKA 5.10

- 1 Dhis ama samee dhidibka wanqarka ee labada barood ee A iyo B haddii $AB = 12$ sm, adigoo isticmaalaya kombas iyo mastarad.
- 2 Dhis (samee) dhidibka wanqarka ee labada barood C iyo D haddii $CD = 20$ sm. Adigoo isticmaalaya kombaska iyo mastarad.
- 3 Dhis (samee) dhidibka wanqarka ee laydiga ABCD haddii $AB = 10$ sm iyo $BC = 8$ sm, adigoo isticmaalaya kombas iyo mastarad.
- 4 Dhis (samee) dhidibka wanqarka ee saddex xagalka labaalaha ah ee ABC, haddii $AB = 3$ sm, $BC = 4$ sm iyo $AC = 3$ sm, adigoo isticmaalaya kombas iyo mastarad.

5.5 CABBIRAAD

5.5.1 WAREEGYADA IYO BADADKA LABA JIBBRANAYAASHA IYO LAYDIYADA

- 1 Laydigu waa shaxan nooc ah? Sawir laydi, dabadeedna tus saaxiibadaada fasalka. Waa maxay wadarta dhererka dhinacyadiisa? Badkiisu waa maxay?
- 2 Laba jibbaaranuhu waa shaxan nooc ah? Sawir laba jibbaarane, dabadeedna tus saaxiibadaada fasalka? Waa maxay wareega laba jibbaaranuhu? Waa maxay badka laba jibbaaranuhu?
- 3 Dhammaan laba jibbaaranayaashu ma laydiyaa? Laydiyadu dhammaan ma laba jibbaaranayaal baa?
- 4 Sideed u raadin wareega laba jibbaarane? Ka laydi? Waa maxay halbeega wareegu?

Intaynaan qaaciidada wareega iyo badka laba jibaarane iyo laydi baranin, marka hore aan qeexno laba jibbaarane.

Hawlgalka 5.10

- ✓ Laydi waa geesoole leh afar dhinac oo labada iska soo horjeeda, isleegyihin, oo dhammaan xaglihiisuna xaglo quman yihiin.



- ✓ Laba jibbaaranuhu waa geesoole afar tiisa dhinac isleeg yihiin

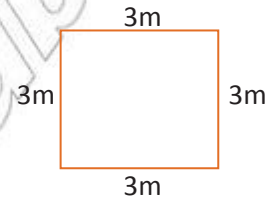


B Wareegyada laba jibbaaranayaasha iyo laydiyada

Ogow: wareega geesoole waa wadarta fogaanta ku wareegsan geesoolaha.

Tusaalaha 1^{aad}: nin beeralay ah ayaa wuxuu leeyahay beer leh qaab laba jibbaarane oo dhererka dhinacyadeedu yihiin 3mitir. haddii uu doono in uu dayro dhulka, wareega dayrku waa imisa?

Furfuris: maadaama oo dhulku yahay laba jibbaarane, dabadeed dhererka dayrku = wadarta dhererka dhinacyada laba jibbaaranaha = 3mitir + 3mitir + 3mitir + 3mitir = 4 (3mitir) = 12mitir.



Sawirka 5.52

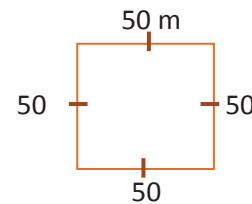
Haddaba wareega dayrku waa 12mitir

Tusaalaha 2^{aad}: haddii Caasha ku wareegto orad geesaha beer laba jibbaarana ah oo dhinacyadeedu yihiin 50mitir hal mar, dabadeed intee in leeg ayay oraday?

Furfuris: wadarta fogaanta Caasha oraday = wadarta

dhererka dhinacyada beerta laba jibbaaranaha
ah = 50mitir + 50mitir + 50mitir + 50mitir = 200mitir.

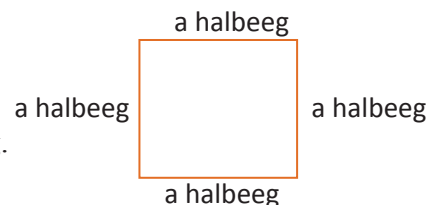
sidoo kale Caasha waxay Oraday 200 mitir.



Sawirka 5.53

Tusaalaha 3^{aad}: raadi wareega laba jibbaarane
dhinacyadiisu yihiin a halbeeg.

Furfuris: wareega laba jibbaarane = a halbeeg + a
halbeeg + a halbeeg + a halbeeg = 4a halbeeg.



Sawirka 5.54

Tusaalaha 4^{aad}: dhinacyada sabuurada leh qaab laydi waa 60 sm iyo 50 sm. Raadi wareega laydiga (sabuurada).

Furfuris:

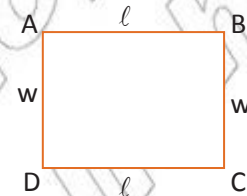
$$\begin{aligned}\text{wareega sabuurada} &= 60 \text{ sm} + 50 \text{ sm} + 60 \text{ sm} + 50 \text{ sm} \\ &= 2 \times 60 \text{ sm} + 2 \times 50 \text{ sm} \\ &= 2 (60 \text{ sm} + 50 \text{ sm}) \\ &= 2 (110 \text{ sm}) = 220 \text{ sm}.\end{aligned}$$



Sawirka 5.55

Haddaba wareega sabuuradu waa 220 sm.

Tusaalaha 5^{aad}: Raadi wareega laydiga haddii dhinacyadiidu ay yihiin ℓ halbeeg iyo w halbeeg.



Sawirka 5.56

Furfuris: wareega laydigu = ℓ halbeeg + w halbeeg + ℓ halbeeg + w halbeeg

$$\begin{aligned}&= [(\ell + \ell) + (w + w)] \text{ halbeeg} \\ &= (2\ell + 2w) \text{ halbeeg} \\ &= 2 (\ell + w) \text{ halbeeg}.\end{aligned}$$

Haddaba,

Wareega laydi dhinacyadiisu yihiin ℓ iyo w waa $2(L+w)$ halbeeg ama $2(\ell + w)$.

T Bedka laba jibbaaranayaasha iyo laydiyada

Badka sallax ama gobol sallax ahi waa inta ku dhex xidhan gobolkaas sallax ah. Waxaan ku qiyaasi karnaa badka gobolka inagoo u qaybinayna laba jibbaaranayaal yar-yar halka halbeeg ah. Tirada laba jibbaaranayaasha yar-yar ee halka halbeeg ahi waa badka gobolka ku xidhan.

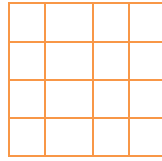
Ogow: laba jibbaarane hal beeg waa laba jibbaarane dhinacyadiisu yihiin 1 halbeeg



Sawirka 5.57

Tusaalaha 6^{aad}: imisa laba jibbaarane oo badkiisu yahay 1 halbeeg ayaad u qaybin kartaa laba jibbaarane dhinacyadiisu yahay 4halbeeg.

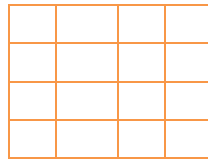
Furfuris: laba jibbaaranaha waxaa loo qaybin karaa (4×4) hal beeg laba jibbaaran



Sawirka 5.58

Tusaalaha 7^{aad}: imisa santi mitir laba jibbaarane ayaa loo qaybin karaa laba jibbaarane dhinacyadiisu yihiin 5 sm?

Furfuris: laba jibbaaranaha waxaa loo qaybin karaa (5×5) santimitir laba jibbaaran = 25santi mitir laba jibbaaran.



Sawirka 5.59

Tusaalaha 8^{aad}: imisa halbeeg laba jibbaaran ayaa loo qaybin karaa laba jibbaarane dhinacyadiisu yahay S?

Furfuris: laba jibbaaranaha waxaa loo qaybin karaa ($S \times S$) halbeeg laba jibbaaran = S^2 hal beeg laba jibbaaran.

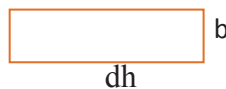
Tusaalaha 9^{aad}: imisa santimitir laba jibbaaran ayaad u qaybin kartaa laydi dhinacyadiidu yihiin 3 sm iyo 2 sm?



Sawirka 5.53

Furfuris: laydiga waxaa loo qaybin karaa (3×2) santimitir laba jibbaaran = 6santi mitir laba jibbaaran.

Tusaalaha 10^{aad}: imisa halbeeg laba jibbaaran ayaad u qaybin kartaa laydi dhinacyadiidu yihiin dh halbeeg iyo b halbeeg?



Sawirka 5.60

Furfuris: laydiga waxaa loo qaybin karaa ($dh \times b$) hal beeg laba jibbaaran.

Haddaba,

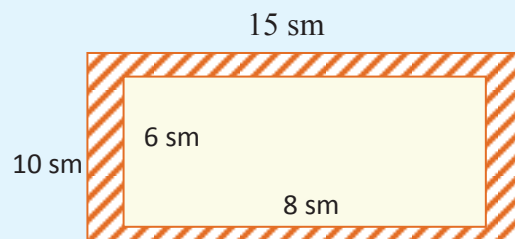
Bedka laydi dhinacyadiisu yihiin dh iyo b halbeeg waa ($dh \times b$) halbeeg laba jibbaaran.

LAYLIKA 5.11

- 1** Raadi wareega laba jibbaarane dhinacyadiisu yihiin
b 3 m **t** 10 dm **j** 14 sm **x** 1mm.
- 2** Raadi wareega laydi dhererkiisa iyo ballaciisu yihiin
b 3 sm iyo 5 sm **t** 10 m iyo 20 m **j** 13 mm iyo 15 mm
x b halbeeg iyo t halbeeg
- 3** Raadi badka laba jibbaarane dhinacyadiisu yihiin
b 10 sm **t** 11 mitir **j** 12 milimitir **x** 15 desimitir
- 4** Raadi badka laydi dhinacyadiisu yihiin
b 3 sm iyo 6 sm **t** 5 sm iyo 11sm
j 6 sm iyo 14 sm **x** 12 sm iyo 13 sm.
- 5** Haddii badka laba jibbaarane ahi yahay
b 25santi mitir laba jibbaaran **t** 100mitir laba jibbaaran
j 9 santi mitir laba jibaaran **x** 16santi mitir laba jibbaaran.

Raadi dhinacyadiisa.

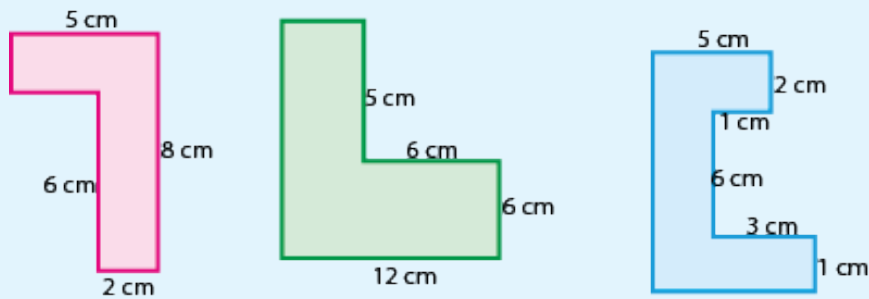
- 6** Haddii badka laydi yahay 16 santimitir labajibaaran oo dhererkiisuna yahay 8 santimitir, waa imisa dhererka ballacu?
- 7** Raadi badka roog dhererkiisu yahay 10m ballaciisu yahay 8 m?
- 8** Raadi Badka dhul laba jibaarane ah oo dhererka dhinaciisu yahay 12 mitir?
- 9** Raadi badka qaybta hadhaysan ee [shaxanka 5.61](#).



Sawirka 5.61

- 10** Haddii badka laydi dhererkiisu yahay 8 sm ballaciisuna yahay 2 sm uu la mid yahay badka laba jibbaarane, raadi wareega laba jibbaaranaha?
- 11** Haddii wareeg laydi yahay 16 sm oo ballaciisuna yahay 3sm, waa imisa dhererka dhinaciisu?
- 12** Haddii wareega laba jibaarane yahay 12 mitir waa imisa badkiisu?

- 13** Raadi badka laba jibbaarane haddii wareegiisu yahay.
b 32 sm **t** 24 mitir **j** 40 sm.
- 14** Raadi dherer silig la doonayo in lagu wareejiyay afar wareeg beer laydi ah, oo dhererkeeda iyo ballaceedu yihiin 120 m iyo 90 m?
- 15** Dherer laydi waa laban laabka ballaciisa haddii wareegu yahay 96 sm, raadi bedka laydiga?
- 16** Imisa laydi ayaa laga samayn karaa wareeg dhan 24 sm, haddii dhinacyadu ay yihiin santimitir togan?
- 17** Beer laba jibbaarane ah oo leh dhinacyo 5 m ah, raadi qiimaha dayrkeeda haddii 4tii halbeegba ay yihiin hal berr.
- 18** Raadi badka shaxan kasta oo hoos ku qoran.

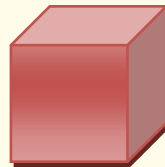


Sawirka 5.62

5.5.2 WEJIYADA SADDEX JIBBAARANAYAASHA IYO BIRIISAMYADA LAYDIYEED

Xasuus:

- 1** Saddex jibbaaranuhu waa sanduuq dhammaan geesihisu isleegyihin.
- 2** Biriisam laydiyeedku waa sanduuq ay wajiyadiisu ka samaysan yihiin gobolo laydi ah, oo geesihisuna ay isku qotomaan midba mida kale.



Shaxanka 5.63

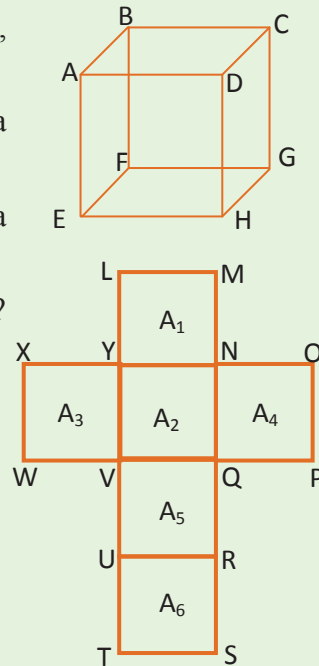
- 3** Shabaqyada saddex jibbaaranuhu ama biriisam laydiyeedku waa habayn la googooyay oo laysku labalaabay si ay u sameeyaan saddex jibbaarane ama birsam laydiyeed.

Hawlgalka 5.11



Aan qaadano (tixgalino sanduuq sida saddex jibbaarane ah oo ka samaysan warqad adag oo la googooyay, oo geesaha dhererkoodu yahay 5sm.

- b** sanduuqa waxaad ka gooysaa geeska AB, AD, DC, CG, DH, AE IYO BF, dabadeed kala dhig-dhig
- t** isbarbar dhig shaxanka aad kala dhig dhigtay ee ka samaysmay a iyo shaxanka hoose.
- j** Afar geesoodle nooc ee ah ayaa ka samaysma shabaqa?
- x** Afar geesoodle kasta waa imisa dhererka dhinaciisu?
- kh** waa imisa wadarta bedka afar-geesoodlayaashu?
- d** ku midabee gobolka A_1 iyo A_5 , midab doogah, A_3 iyo A_4 midab dacar ah, A_2 iyo A_6 midab cas.
- r** wajiyadee ayaa afar geesoolaha u taagan midabka dooga ah ? wajiyadee ayaa midabka huruuda ah ee afar geesoolayaasha u taagan? Wajiyadee ayaa midabka cas ee afar geesoolayaasha u taagan?
- s** iskaga soo laab shabaqyada UR, VQ, QN, YN iyo YV, dabadeena fiiri adkaha soo baxa. Ma seddexjibaaranaha?
- sh** isbarbar dhig wadarta bedka wajiyada saddex jibbaaranaaha iyo wadarta bedka gobolada ma isku midbaa labada bed ?



Sawirka 5.64

Howlgalka xaga sare ku xusan Waxan ku soo aragnay waxyaalaha soo socda.

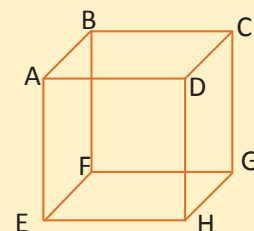
- Marka sanduuqa seddexjibaaranaha la googooyo ee la kala dhigo shabaqa waxaa ka samaysmi sanduuq leh lix waji oo labajibbaaraneyaal ah
- Wadarta bedka wajiyada sanduuqa wajigiisu labajibaaranaha yahay waa wadarta bedka gobolada labajibbaaranaaha ah ee shabaqa uu ka samaysmay seddex jibaaranuhu.

SHAQO KOOXEEDKA 5.8



Aan tixgalino birisam xidhan ee ABCDEFGH ee dhinacyadiisu yihiin 3 sm, 4 sm, iyo 5 sm, kasoo ka samaysan warqad adag

- b** Birisamka ka goo AD, AB,BC, AE, BH, CE, DF.
- Kalana dhig dhig sanduuqa fiiri shaxanka ku soo baxa.



t isbarbar dhig shaxanka aad kala dhig dhigtay iyo shaxanka hoose?

j shaxan nooc ee ah ayaa ka samaysma shabaqyada birisamka ?

x imisa lammaano oo laydiyo ah oo leh bed isku mid ah ayaa ka samaysma shabaqa.

kh waa maxay dhinacyada laydiyada ka samaysma shabaqa ama gobolada?

d A_1 iyo A_5 midab doog ah mari, A_3 iyo A_4 midab huruud ah mari A_2 iyo A_6 midab cas mari

r waa imisa wadarta bedka shabaqyadu (gobaladu)

s isbarbardhig wadarta bedka shabaqa (gobolada) iyo wadarta wajiyada birissamka, ma isku midbaa?

sh haddii aad isaga soo laabto shabaqyada (gobolada) RQ, SN, NK, VK iyo VS ayna sameeyaan adke, miyuu noqon doonaa birisamkii hore? waa maxay dhinacyada adkaha cusubi?

Sawirka 5.66

Shaqo kooxeeda xaga sare, waxaad ku ogaan doontaa in

- Marka birisamka laydiyeed la kala googooyo ee laga kala dhigdhigo BX, BT, TJ, BKH, TD, TR , iyo XS shabaqa birisamka ayaa samaysma
- Goboladani (shabaqyadani) waxaa ka samaysma seddex lammaane laydi oo leh beddad isku mid ah.
- Dhinacyada laydiyadu waa 3sm iyo 4sm , 4sm iyo 5sm , 3sm iyo 5sm .
- Marka shabaqyadan ama goboladan laysaga laabo RO, SN, NK, VK iyo VS waxaa samaysma adkihii hore.

LAYLIKA 5.12

- 1 samee gobolada seddex jibaaranaha dhinacyadiisu yihiin 6sm iyo 6sm , 6sm midabee labajibaaranayaasha ka samaysma salalka dooga ah, labajibbaaranayaasha ka samaysma lammaanaha wajiyada huruuda ah iyo kuwa cas. Raadi wadarta bedka wajiga seddex jibaaranaha, adigoo raadinaya bededka labajibaaranayaasha.
- 2 Samee gobolada birisam laydiyeedka dhinacyadiisu yihiin 2sm , 3sm iyo 6sm midabee laydiyada ay sameeyaan salalka dooga ah, laydiyada ay sameeyaan wajiyada huruurda ah iyo kuwa casi, raadi wadarta bedka birisamka adigoo raadinaya bededka gobolada (shabaqa) birisamka.

- 3** Imisa labajibaarane ayaa sameeya shabaqa saddex jibaarane (sanduuqa)?
- 4** Imisa lammaane laydi oo leh bed isku mid ah ayaa sameeya shabaqa birisam laydiyeedka?

5.5.3 MUGGAGA SANDUUQYADA WAJIYADOODU LABA JIBBAARANAHA YIHIIN IYO BIRISAMYADA LAYDIYEED

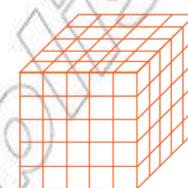
Tusma hoosaadkan waxaad gacanta ka qabandoontaa sida loo qiyaaso muggaga sanduuqyada wajigoodu yahay laba jibbaarane iyo birsam laydiyeedka, adigoo ka buuxinaya saddex jibaar halbeegyo.

Ogow: saddex jibbaarane halbeeg waa sanduuq dhinacyadiisu yihiin laba jibbaarane dhinacyadiidu yahay 1 halbeeg.



Sawirka 5.66

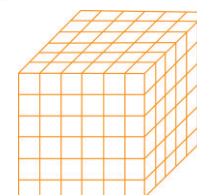
Tusaalaha 1^{aad}: aan tixgalino sanduuqa wajiyadiisu yihiin laba jibbaarane dhinacyadiisu yihiin 5 sm. Sanduuqu wuxuu qaadi karaa (5 sm × 5 sm)



Sawirka 5.67

Saddex jibbaarayaal = 125 sm sanduuq saddex jibbaarane.

Tusaalaha 2^{aad}: imisa santi mitir oo saddex jibaaran ayaa lagu buuxin karaa saddex jibaarane dhinacyada wajiyadiisu yihiin 6sm.

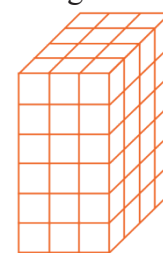


Sawirka 5.68

Furufuris: saddex jibaaranaha (sanduuqa) waxaa laga buuxin karaa 6 sm × 6 sm × 6 sm = 216 sm saddex jibaaran.

Saddex jibbaarane wajiyada, dhinacyadiisu yihiin a waxaa laga buuxin karaa (a halbeeg X halbeeg X a halbeeg) = a^3 hal beeg oo saddex jibaarane, haddaba mugga sanduuqa sadex jibbaarane dhinaciisu yihiin a halbeeg waa a^3 halbeeg oo saddex jibaaran.

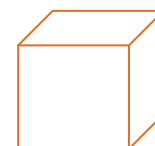
Tusaalaha 3^{aad}: imisa santi mitir oo saddex jibaaran ayaa laga buuxin karaa birisam laydiyeed dhinacyadiisu yihiin 3 sm, 4 sm iyo 5 sm.



Shaxanka 5.69

FurFuris: birisamka waxaa laga buuxin karaa (3 sm × 4 sm × 5 sm) = 60 sm oo saddex jibbaran.

Ogow: Biriisam laydiyeedka dhinacyadiisu yihiin l halbeeg, w halbeeg iyo H halbeeg waxaa uu qaadi karaa ($l \times w \times H$) hal beegoo saddex Jibaaran.



Shaxanka 5.70

Hadaba, mugga biriisam laydiyeedka dhinacyadiisu yihiin ℓ , w iyo h halbeeg waa $(l \times w \times h)$ halbeeg oo saddex jibaaran.

Halka iyo tusaalayaasha xagga sare ku xusan.

- Saddex jibbaarane (box) dhinacyadiisu xidhan yihiin, xaddiga gudihiisa ahi waa muggiisa, muggan waxaa lagu cabbiri karaa ayadoo laga buuxiyo saddex jibaarane halbeegyo (sanduuq dhinacyadiisu yihiin laba jibbaarane dhinaciisu yahay 1 halbeeg) mugga sanduuq dhererka dhinacyadiisu yihiin a halbeeg = a^3 halbeeg oo saddex jibaaran.
- Biriisam laydiyeedka dhinacyadiisa dhererkoodu yahay ℓ , W iyo h inta u dhaxaysa ee wajiyadiisu ay ku xidhan yihiin waa mugga birisamka. Mugga saddex jibbaarane dhinacyadiisa dherer koodu yahay ℓ , W iyo h halbeeg waa $V = (l \times w \times h)$ halbeeg oo saddex jibaaran.

LAYLIKA 5.13

- 1 Buuxi mugga saddex jibaarane dhinacyadiisu yihiin
b 8 sm **t** 6 sm
j 7 sm adigoo tirinaya inta santimitir saddex jibaaran.
- 2 Ka buuxi mugga birsam laydiyeedka dhinacyadiisu yihiin:
b 1 sm, 5 sm iyo 6 sm **t** 10 sm, 4 sm iyo 12 sm
j 11 sm, 12 sm, 14 sm adigoo tirinaya inta santi mitir saddex jibaaran ee laga buuxin karo birisan
- 3 Sanduuq ka samaysan xadiid (iron) ayaa dhinacyadiisu yihiin 2 sm, 4 sm iyo 8sm. Sanduuqii waa la dhalaaliyay waxaan ka samaysmay saddex jibbaarane waa imisa dhinacyada saddex jibbaarano?
- 4 Birisam laydiyeed leh labadan dhinac 12 sm iyo 2 sm, haddii mugga birisamku yahay 72 sm saddex jibaaran, raadi dhinac hadhay?
- 5 Raadi dhererka dhinaca saddex jibaarane mugiiisu yahay 8 santimitir saddex jibaaran.
- 6 Haddii mugga saddex jibbaarane iyo birisam laydiyeed dhinacyadiisu yihiin 8 sm, 4 sm iyo 2 sm ay isku mid yihiin, raadi dhinaca saddex jibbaarane.
- 7 Imisa senti mitir saddex jibaaran oo biyo ah ayey qaadi kartaa walax dherer keedu yahay 6 cm, ballaceeduna yahay 4 cm, joog ee duna yahay 10 cm?
- 8 Imisa sentimitir saddex jibaaran ayaa oo caano ah ayaa laga buuxin karaa birisam laydiyeed dhinacyadiisu yihiin 5 sm, 10 sm iyo 3 sm?
- 9 Waa maxay halbeega badku? waa maxay halbeega mugga?

Erayada Furaha ah

→ Xariiqyo isgooya	→ xariiqyo barbaro ah
→ Xariiqyo isku qotoma	→ xariiqyo isku qotoma oo laba meelood oo isleeg u qaybiya xariijin lagu siiyay.
→ Lammaane kombasyo ah	
→ Mastarad	
→ Xagal	→ qalabka laba jibaaranaha ah
→ Geeska xagasha	→ bar-badhtanka xariijinta.
→ Halbeega digrii ee xagasha	→ dhinaca xagasha
→ Xagal qaybiye	→ xagal cabire.
→ Saddex xagal fiiqan, saddex xagal	→ xagal fiiqan
→ Xagal quman, saddex xagal daacsan	→ xagal daacsan
→ saddex xagal aan isleekayn	→ xagal quman
→ saddex xagal labaale ah	→ xagal toosan
→ saddex xagal siman	→ xagal dhacsan
→ Wareega geesoole, badka geesoole	→ xagal dhamaystiran.
→ Saddex jibaaranayaasha iyo	→ saddex xagal
→ birisam laydiyeyo	→ dhidibada wanqarka
→ Mugga sanduuqa saddex jibaaarane	→ iyo biriisam laydi yeedyada.
→ shabaga (gobolada)	→ saddex jibaaranaha iyo biriisam
→ laydiyeedka	→ Halbeeg laba jibaaran
→ halbeeg saddex jibaaran	→ Santi mitir laba jibbaaran
→ santi mitir saddex jibaarane.	

Soo koobida cutubka 5

- ✓ Laba ama in ka badan oo xariiq oo isku sallax ahi ama way isjaraan ama waa barbaro.
- ✓ Laba xariiqood oo barbaro ah oo isku sallax ku dhaca si kasta haddii loo fidiyo isma jaraan.
- ✓ Laba barood oo lagu siiyay waxaa mari kara uun hal xariiq oo labadoodu dul dhacaan.
- ✓ Xariiq iyo bar lagu siiyay oo aan dul oolin.
waxaa jira xariiqo badan oo aan la tirin Karin oo mara bartaa xariiqda.

Waxaa jira hal xariiqda oo kaliya oo barbaro la ah xariiqda lagu siiyay martana bartaas lagu siiyay.

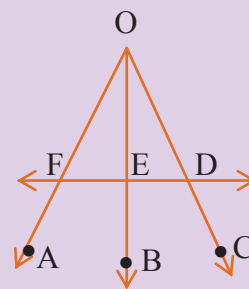
- ✓ Haddii P iyo Q ay yihiin laba barood, kuwaas oo ku wanqaran (fogaan isleeg uga kala jira labada dhinac) xariiqda L, dabadeed L waxaa la yidhaahdaa dhidibka wanqarka iyo wanqarka ku qotoma ee labada isleeg u qaybiya xariijinta PQ.
- ✓ Xagal waa inta furan ee u dhaxaysa laba fallaadhood oo is jara. Fallaadhaha sameeya xagasha waxaa la yidhaahdaa gacmaha ama dhinacyada xagasha. Barta ay labada fallaadhood ku kulmaan waxaa la yidhaahdaa geeska xagasha.
- ✓ Xagasha badanaa waxaa lagu cabiraa xagal cabire (protractor).
- ✓ Halbeega caanka ah ee xagasha lagu cabbiraa waa digrii, waxaana loo qoraa ($^{\circ}$)
- ✓ Xaglaha waxaa loo magacaabaa siyaabo kala duwan.
- ✓ Xaglaha waxaa lagu kala soocaa cabbirkooda.
- ✓ Xaglaha fiicani waa xagasha cabbirkeedu u dhexeeyo 0° iyo 90° .
- ✓ Xagal qumani waa xagasha cabbirkeedu yahay 90° .
- ✓ Xagal toosan waa xagasha cabbirkeedu yahay 180° .
- ✓ Xagal dhacsan waa xagasha cabirkeedu u dhexeeyo 180° iyo 360° .
- ✓ Xagal dhamaystiran waa xagasha cabbirkeedu yahay 360° .
- ✓ Xagal qaybiye waa fallaadha labada isleeg u qaybisa xagasha lagu siiyay.
- ✓ Saddex xagal waa geesoole saddex dhinac leh, lehna 3-xaglood, saddex gees iyo bad.
- ✓ Saadex xagal waxa lagu kala saaraa dhererka dhinacyadiisu ama cabbirka xaglihiisa.
- ✓ Saddex xagal leh xagal fiiqan, waa saddex xagalka saddexdiisa xaglood yihiin xaglo fiiqan.
- ✓ Saadex xagal guman waa saddex xagal hal xagal oo xaglihiisa ka mid ahi ay tahay 90° .
- ✓ Saddexagal daacsan, waa seddexagalka leh hal-xagal ah oo daacsan.
- ✓ Seddexagal aan isle, ekayn waa seddexagalka aanay jirin laba dhinac oo isle, eg.

- ✓ Seddexagal siman, waa seddexagalka seddexdiisa dhinac ay isle, eg yihiin.
- ✓ Wadarta 3 xaglood ee seddexagal waa 180°
- ✓ Wareegyada laba jibaarane iyo laydi waa wadarta dhererka dhinacyadooda
- ✓ Bededka labajibbaarane iyo laydi waa xaddiga ku dhex-xidhan laydiga iyo labajibaaranaha. Badanaa waxaa ku muujinaa (cadeynaa) bedka halbeeg labajibaaran,
- ✓ Wareega labajibaarane dhinaciisu yahay 5 waa $(5 \times 5) = 5^2$ halbeeg labajibaaran
- ✓ Wareega laydi dhinacyadiisu yihiin L iyo W waa $2(L+W)$ halbeeg
- ✓ Bedka laydi dhinacyadiisu yihiin L iyo W waa $(L \times W)$ halbeeg labajibaaran
- ✓ Seddexjibaarana waa sanduuq dhinacyadiisu dhamaan ay isle, eg yihiin.
- ✓ Birisam laydiyeedku waa sanduuq geesihisu ay isku qotomaan, dhamaan wajiyadiisuna ay yihiin laydiyo.
- ✓ Mugga seddexjibaarane geesihisu yihiin a halbeeg waa halbeeg seddexjibaaran = a^3 halbeeg saddex jibbaatan.
- ✓ Mugga birisam laydiyeed dhinacayada wajiyadiisu yihiin l, w iyo h waa $(l \times h \times w)$ halbeeg seddexjibaaran
- ✓ Mugga seddexjibaarane iyo birisamyada waxaa lagu qiyaasi kara ayadoo laga buuxiyo seddexjibaarane halbeegyho yar-yar.

Laylis guud

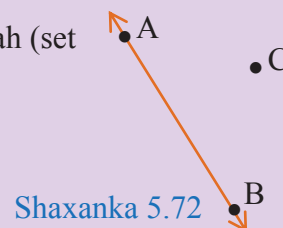
Laylisyada nakhtiinka ah ee ee cutubka 5^{aad}

- 1 **b** magacow lammaanayaasha xariiqyada isjara
- t** halkee ayey iska jaraan FD iyo BO
- j** FD iyo CD miyey isjaraan? haday haa tahay halkee ayey iska jaraan?



Shaxanka 5.71

- 2 Adigoo isticmaalaya qalabka labajibaaranaha ah (set square) iyo mastarad sawir xariiq marta bart C barbarona la ah BT



Shaxanka 5.72

- 3** Adigoo isticmaalaya mastarad iyo kombas dhis xariiqda ku qotonta xariijinta AB ee labada isle, eg u qeybisa AB dhererkeeduna yahay 20 sm
- 4** dhis xariiqda [sawirka 5.73](#) marta R ee ku qotonta PQ
- 5** P iyo P waa laba barood oo wanqaran, haddii dhererka PP uu yahay 30 sm.
- b** bartee ayey PP ka maraa L?
- t** L miyey ku qotontaa PP?
- 6** Kasoo qaad in cabbirka $\angle ABC$ tahay 50° , adigoo isticmaalaya kombas iyo mastarad laba isle, eg u qeybi xagasha
- 7** Haddii dhererka dhinacyada seddexagalka lagu siiyey yihiin
- b** 3.5, 2.7 iyo **t** 4,4 iyo 5 **j** 3, 3 iyo 3
- Seddexagal kastaa waa noocma?
- 8** Haddii laba xaglood oo sddexagal lagu siiyey ay yihiin 124° iyo 50° raadi cabbirka xagasha 3^{aad} ? Waana noocma?
- 9** Haddii dhinaca labajibaarane yahay 5 sm , raadi
- b** wareegiisa **t** bedkiisa.
- 10** Haddii dhererka laydi yahay 5sm, bedkiisuna yahay 15 sm^2 , raadi.
- b** ballaca laydiga **t** wareega laydiga
- 11** Dhinacyada sibidhka qolka ayaa ah 3 m iyo 5 m qof ayaa doonayey in uu sibidhka dhigo mar-mar dhagax ah oo leh qaab labajibaarane oo dhinaciisu yahay 10 sm. Imisa dhagax oo mar-mar ah ayaa loo baahan yahay in la dhigo sibidhka qolka?
- 12** Sanduuq ayaa leh qaab seddexjibaarane dhinaca geesihiisu yahay 6 sm. Waa intee inle, eg bedka sanduuqu?
- 13** Weel (shaywaxqaada) ayaa leh qaab birisam laydi. Haddii dhinacyadiisu yahay 1 m, 2 m iyo 4 m raadi mugga weelka.
- 14** Raadi mugga seddexjibbaaranaha dhinaciisu yahay
- b** 3 sm **t** 5 sm **j** 6 sm.
- 15** raadi mugga birisam laydiyeedka dhinacyadiisu yihiin.
- b** 8 sm, 4 sm iyo 6 sm. **t** 2 m, 3 m iyo 4 m