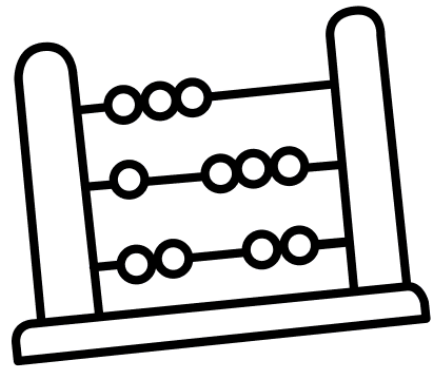


Qiimaynta tibaaxaha iyadoo la beddelayo ama aan la beddelin mawduuca

Maths

Cutub: Tibaaxaha iyo qaaciidooyinka



Natiijo

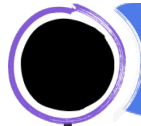
Waxaan qiimayn karaa tibaax halkaas oo mawduuca la beddelay iyo halka aan la beddelin.

Mawduuca isla'egta/qaaciidada waa doorsoome lagu muujiyey doorsoomayaal kale. Waa inuu leeyahay jibbaar 1 iyo isugeyn 1.

Tusaale ahaan, a waa mawduuca qaaciidadan $a = \sqrt{c^2 - b^2}$

laakiin, a^2 ma aha mawduuca qaaciidadan $a^2 = c^2 - b^2$

Qiimaynta tibaaxaha iyadoo la beddelayo ama aan la beddelin mawduuca.



Dib-u-habaynta si loo xalliyo



Qiimaynta iyadoon la beddelin mawduuca

Cali iyo Saciid waxay baranayaan joomatari.

Waxaan isticmaali karnaa qaaciidadan si aan u ogaanno bedka.

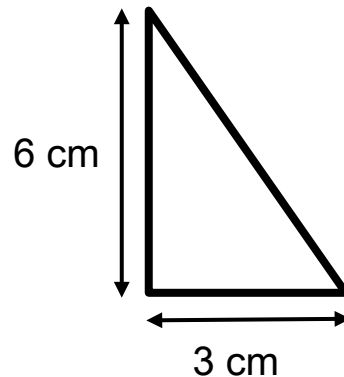
$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2} \times 3 \times 6$$

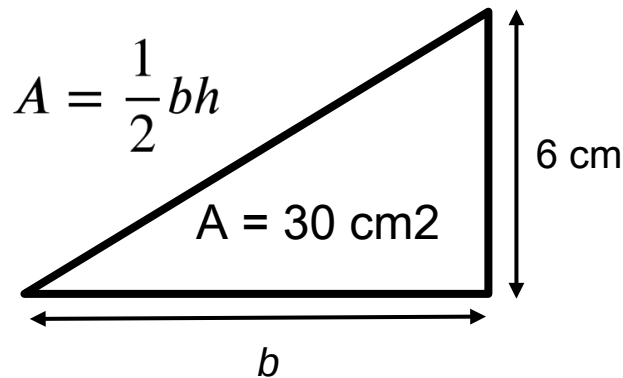
$$A = \frac{1}{2} \times 18$$

Bedku waa 9 cm²



Dib-u-socodka ayaa ah meesha ardaydu inta badan ku qaldaan qaaciidooyinka.

Bedku waa 30 cm², dhererku waa 6 cm. Soo hel salka.



Waxaan u malaynayaa inaan ku bilowno $30 \div 6$ oo ah 5

Haa. Markaas waxay la xiriirtaa 'nus-qaadista' sidaas darteed waxaan u malaynayaa in saldhigu yahay 2.5 cm



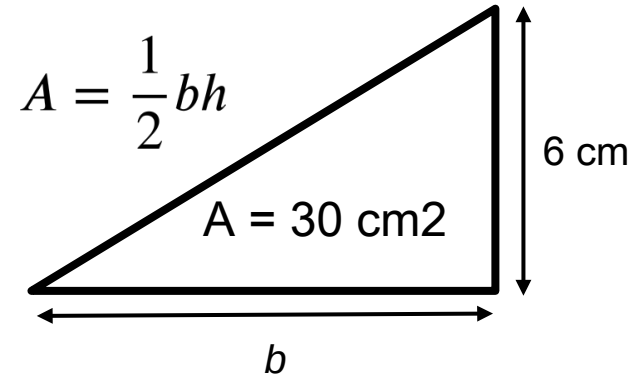
Ma ku raacsan tahay Cali iyo Saciid?



$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2} \times 2.5 \times 6$$

$$A = \frac{1}{2} \times 15 = 7.5 \text{ cm}^2$$



Waan tijaabin doonaa jawaabteena.

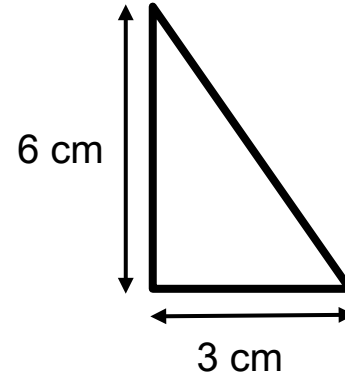
2.5 ma noqon karo sax!

Haa. Marka waxay la xiriirtaa 'kala badh' (halving) marka waxaan u malaynayaa in salku yahay 2.5 cm



Sababta bedka u fududaa in la helo dhibkii hore waa sababta oo ah bedka ayaa ahaa mawduuca (subject) qaacidada.

$$A = \frac{1}{2}bh$$



Haddii aan la garanayn ee aan doonayno inaan xallinno uu yahay mawduuca (subject) qaacidada, waxaan u shaqayn karnaa si hufan.

Ka dhigista b mawduuca (subject) qaacidada waxay ka dhigi kartaa dhibka Cali iyo Saciid mid toos ah.

$$A = \frac{1}{2}bh$$

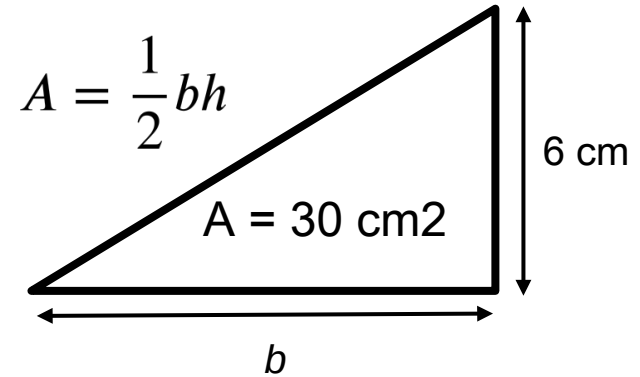
$$2 \times A = 2 \times \frac{1}{2}bh$$

$$2A = bh$$

$$\frac{2A}{h} = b$$

Dib-u-habayn si loo xalliyo

Bedku waa 30 cm², dhererku waa 6 cm. Soo hel salka.



Waxaan isticmaali karnaa habkan qaacidada si aan u xallinno salka.

$$\frac{2A}{h} = b$$

$$\frac{2 \times (30)}{(6)} = b$$

$$\frac{60}{6} = b$$

Salku waa 10 cm
Taasi way fududayd markii aan dib u habaynay qaacidada!



Dib u habayn si loo xalliyo

Bedka waa 10 cm², saldhiggu waa 8 cm. Soo hel dhererka.

Dib u habee qaacidada si h uu u noqdo mawduuca, ka dibna qiimee si aad u hesho dhererka.

$$A = \frac{1}{2}bh$$

$$2 \times A = 2 \times \frac{1}{2}bh$$

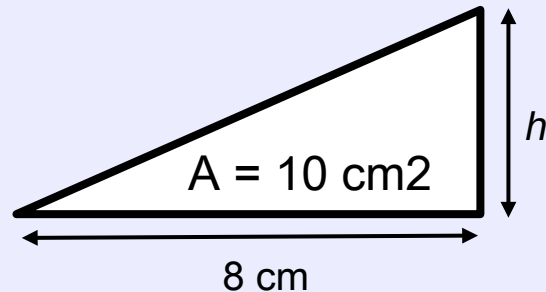
$$2A = bh$$

$$\frac{2A}{b} = h$$

$$\frac{2(10)}{8} = h$$

$$\frac{20}{8} = h$$

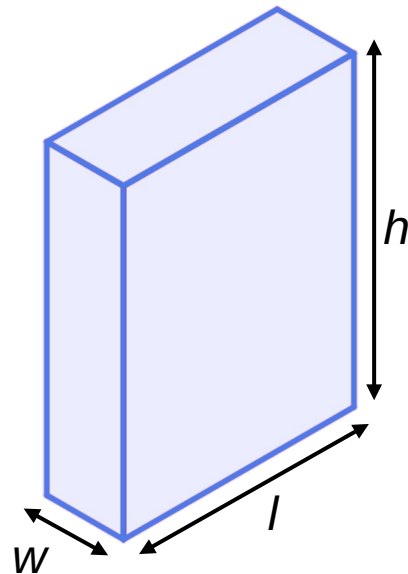
$$h = 2.5 \text{ cm}$$



1) Qaacidada mugga cuboid waxaa loo qori karaa $V = lwh$

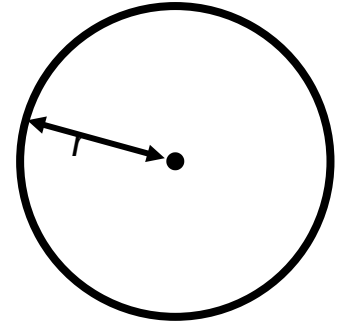
Dib u habee qaacidada si w uu u noqdo mawduuca. Ka dibna qiimee si aad u hesho ballaca cuboid leh dherer 1.6 cm, joog 2.25 cm, iyo mug 1.44 cm³

Waxaad isticmaali kartaa xisaabiyaha si aad u sameysid beddelka.



2) Qaacidada bedka goobada waa $A = \pi r^2$

Dib u habee qaacidada si r uu u noqdo mawduuca. Ka dibna qiimee si aad u hesho radius goobada leh bed 80 cm^2
Si jawaabtaada 2 d.p.



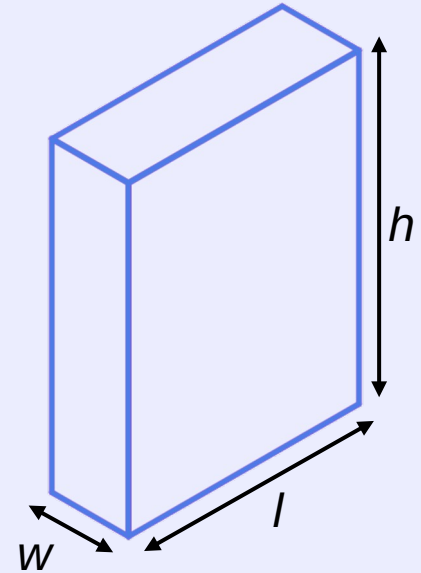
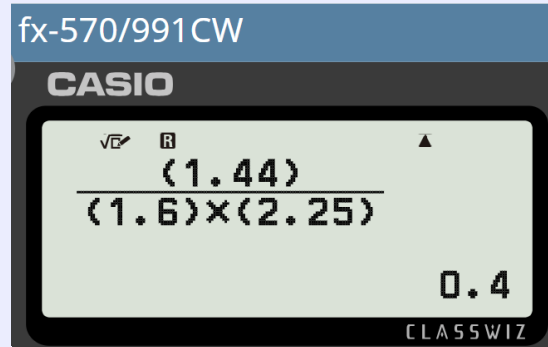
Waxaad isticmaali kartaa xisaabiyaha si aad u sameysid beddelka.

1) Qaacidada mugga cuboid waxaa loo qori karaa $V = lwh$

Dib u habee qaacidada si w uu u noqdo mawduuca. Ka dibna qiimee si aad u hesho ballaca cuboid leh dherer 1.6 cm, joog 2.25 cm, iyo mug 1.44 cm³

$$V = lwh$$

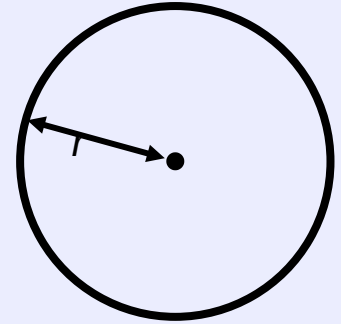
$$\frac{V}{lh} = w$$



$$w = 0.4 \text{ cm}$$

2) Qaacidada bedka goobada waa $A = \pi r^2$

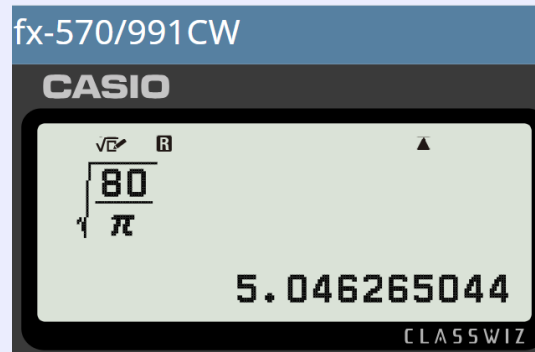
Dib-u-habi qaacidada (formula) si r uu u noqdo mawduuca (subject). Kadibna qiimee si aad u heshid radius (radius) goobada (circle) leh bed (area) 80 cm²



$$A = \pi r^2$$

$$\frac{A}{\pi} = r^2$$

$$\sqrt{\frac{A}{\pi}} = r$$



$$r = 5.05 \text{ cm (ilaa 2 d.p.)}$$

Qaabka casharka

Qiimaynta tibaaxaha (expressions) iyadoo mawduuca (subject) la beddelayo iyo iyadoon la beddelin



Dib-u-habayn si loo xalliyo



Qiimaynta iyadoon mawduuca (subject) la beddelin

Qiimaynta iyadoon mawduuca (subject) la beddelin

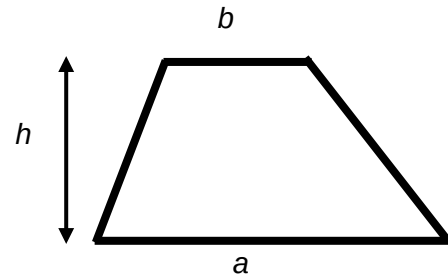
Cali iyo Saciid hadda waxay baranayaan trapezium-yada.

Bedka (area) trapezium-ku waa 70 cm², dhererka salka hoose waa 9 cm, dhererka salka sare waa 5 cm

Xisaabi dhererka (height).

Waxaan dib-u-habin karnaa qaacidadan (formula) bedka (area) si h uu u noqdo mawduuca (subject).

$$A = \frac{1}{2}(a + b)h$$



Qiimaynta iyadoon mawduuca (subject) la beddelin

Bedka (area) trapezium-ku waa 70 cm², dhererka salka hoose waa 9 cm, dhererka salka sare waa 5 cm

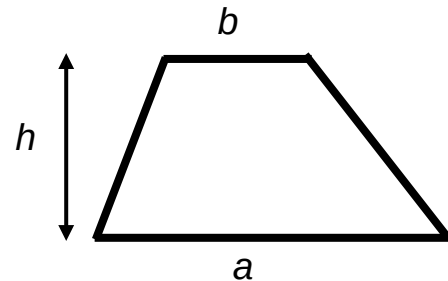
Xisaabi dhererka (height).

$$A = \frac{1}{2}(a + b)h \quad \frac{2(70)}{(9) + (5)} = h$$

$$2A = (a + b)h \quad \frac{140}{14} = h$$

$$\frac{2A}{a + b} = h$$

$$h = 10 \text{ cm}$$



Ma hubo in
habkaasi uu ahaa
mid waxtar badan
dhibaatan!



Qiimaynta iyadoon mawduuca (subject) la beddelin

Bedka (area) trapezium-ku waa 70 cm², dhererka salka hoose waa 9 cm, dhererka salka sare waa 5 cm

Xisaabi dhererka (height).

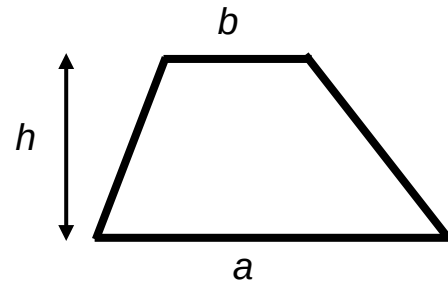
Waa hagaag Saciid!
Habkaagu wuxuu ahaa mid
aad waxtar u badan markan!

$$A = \frac{1}{2}(a + b)h$$

$$70 = \frac{1}{2}(5 + 9)h$$

$$70 = 7h$$

$$h = 10 \text{ cm}$$



Waxaan qiimayn karnaa
iyadoon marka hore dib-
u-habin.



Waxaan qiimeyn karnaa iyada oo aan beddelin mawduuca, mararka qaarkoodna tani waxay noqon kartaa mid waxtar badan.



Cuboid (cuboid) wuxuu leeyahay ballac 4.5 cm, joog 20 cm, iyo mug (volume) 630 cm³

Ku beddel qaacidada $V = lwh$ oo qiimee iyada oo aan dib-u-habayn, si aad u hesho dhererka (l).

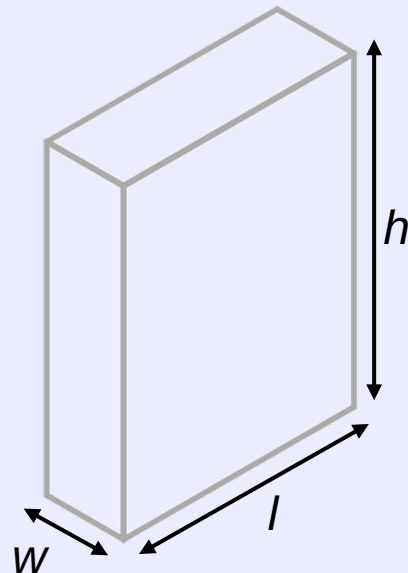
$$V = lwh$$

$$630 = l \times 4.5 \times 20$$

$$630 = 90l$$

$$l = 7 \text{ cm}$$

Habkani wuxuu ahaa mid aad waxtar u leh.



1) Cabbiraadaha maqan ee trapezium (trapezium).

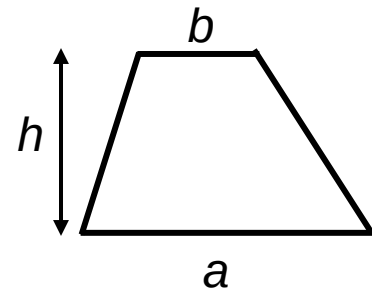
a) Trapezium (trapezium) wuxuu leeyahay bed (area) 95 cm², dhererka salka hoose 23 cm iyo dhererka salka sare 15 cm

Ku beddel iyada oo aan dib-u-habayn, si aad u hesho joogga (h).

b) Trapezium (trapezium) wuxuu leeyahay bed (area) 88 cm², dhererka salka hoose 14 cm iyo joog 8 cm

Ku beddel iyada oo aan dib-u-habayn, si aad u hesho salka sare (b).

c) Kee ayaa ahaa dhibka ugu adag, (a) ama (b)? Qor jumlad sharraxaysa sababta oo soo jeedi hab kale oo lagu xalliyo.



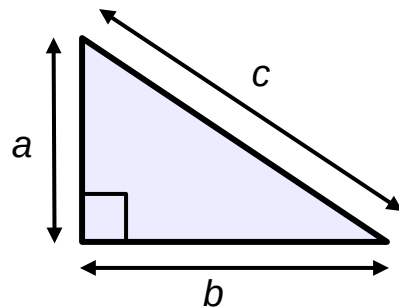
$$A = \frac{1}{2}(a + b)h$$

2) Saddex-xagal qumman (right triangle) wuxuu leeyahay hypotenuse (hypotenuse) 13 cm, iyo dherer gaaban oo 12 cm

a) Ku beddel oo qiimee iyada oo aan dib-u-habayn, si aad u hesho dhererka gaaban ee hadhay.

b) Dib-u-habi si aad uga dhigtid a mawduuca, ka dibna ku beddel si aad u hesho dhererka gaaban ee hadhay.

c) Isbarbardhig hababka qaybta a) iyo b)



$$a^2 + b^2 = c^2$$

1) Cabbiraadaha maqan ee trapezium (trapezium).

a) Trapezium (trapezium) wuxuu leeyahay bed (area) 95 cm², dhererka salka hoose 23 cm iyo dhererka salka sare 15 cm

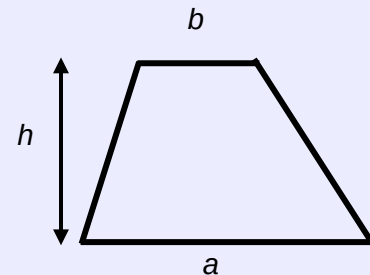
Ku beddel (substitute) adigooon dib u habeyn (rearrange) si aad u hesho dhererka (height, h).

$$A = \frac{1}{2}(a + b)h$$

$$95 = \frac{1}{2}(23 + 15)h$$

$$95 = 19h$$

$$h = 5 \text{ cm}$$



$$A = \frac{1}{2}(a + b)h$$

1) Cabbirrada maqan ee trapezium-ka.

b) Trapezium-ku wuxuu leeyahay bed (area) 88 cm², dhererka salka hoose 14 cm, iyo dherer (height) 8 cm

Ku beddel (substitute) adigoo dib u habeyn (rearrange) si aad u hesho salka sare (upper base, b).

$$A = \frac{1}{2}(a + b)h$$

$$88 = \frac{1}{2}(14 + b)8$$

$$88 = 4(14 + b)$$

$$88 = 56 + 4b$$

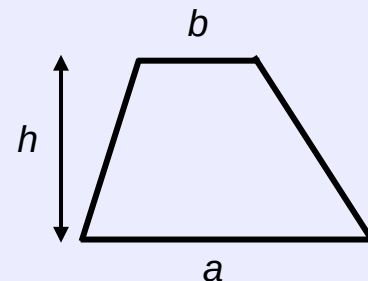
$$32 = 4b$$

$$b = 8 \text{ cm}$$

c) Qaybta (b) waxay ahayd mashaakilaadka ugu adag. Waxay lahayd tillaabooyin badan oo xirfado badan ku lug lahaayeen, sidaas darteed fursado badan oo qalad ah.

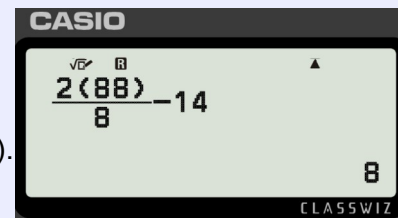
Hab kale oo la isticmaali karo waa in dib loo habeeyo (rearrange) qaacidada (formula) si b u noqoto mawduuca (subject)...

...oo la beddelo (substitute).



$$A = \frac{1}{2}(a + b)h$$

$$\frac{2A}{h} - a = b$$



2) Saddex-xagal qumman (right triangle) wuxuu leeyahay hypotenuse 13 cm, iyo dherer gaaban oo 12 cm

a) Ku beddel (substitute) oo qiimee (evaluate) adigoo dib u habeyn (rearrange) si aad u hesho dhererka gaaban ee hadhay.

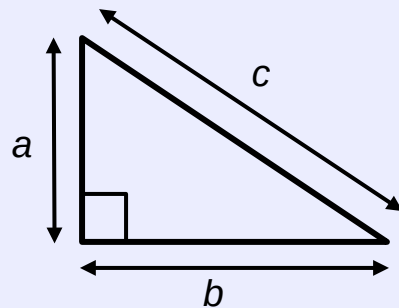
$$a^2 + 12^2 = 13^2$$

$$a^2 = 13^2 - 12^2$$

$$a^2 = 169 - 144$$

$$a^2 = 25$$

$$a = 5 \text{ cm}$$



$$a^2 + b^2 = c^2$$

2) Saddex-xagal qumman (right triangle) wuxuu leeyahay hypotenuse 13 cm, iyo dherer gaaban oo 12 cm

b) Dib u habeey (rearrange) si a u noqoto mawduuca (subject), ka dibna ku beddel (substitute) si aad u hesho dhererka gaaban ee hadhay.

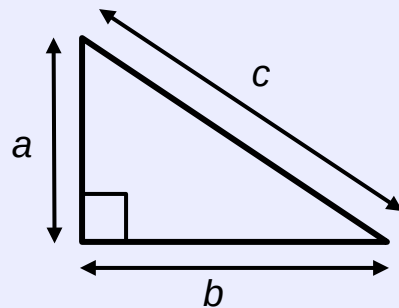
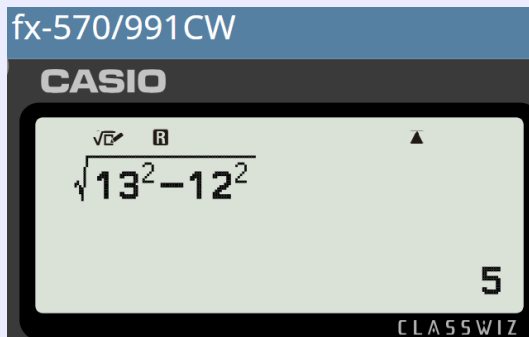
$$a^2 + b^2 = c^2$$

$$a^2 = c^2 - b^2$$

$$a = \sqrt{c^2 - b^2}$$

$$a = \sqrt{13^2 - 12^2}$$

$$a = 5 \text{ cm}$$



$$a^2 + b^2 = c^2$$

2c) Saddex-xagal qumman (right triangle) wuxuu leeyahay hypotenuse 13 cm, iyo dherer gaaban oo 12 cm

a) Qiimee (evaluate) adigoon dib u habeyn (rearrange)...

b) Marka hore dib-u-habayn...

$$a^2 + 12^2 = 13^2$$

$$a^2 = 13^2 - 12^2$$

$$a^2 = 169 - 144$$

$$a^2 = 25$$

$$a = 5 \text{ cm}$$

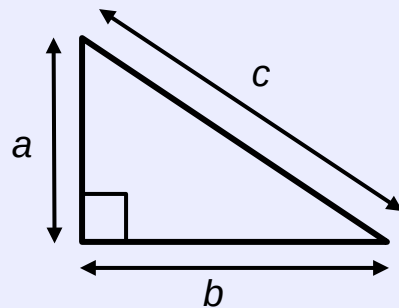
$$a^2 + b^2 = c^2$$

$$a^2 = c^2 - b^2$$

$$a = \sqrt{c^2 - b^2}$$

$$a = \sqrt{13^2 - 12^2}$$

$$a = 5 \text{ cm}$$



$$a^2 + b^2 = c^2$$

Waxaa jira isku ekaansho badan oo u dhexeeya labada hab. Waxay nasiinayaan natiijo isku mid ah iyo heer shaqo oo isku mid ah dhibaatan.

Soo koobid

Qiimeynta tibaaxaha (expressions) iyadoo la beddelayo ama aan la beddelin mawduuca (subject)

Marka la raadinayo waxyaabaha aan la garanayn ee isla'egyada (equations) iyo qaaciidooyinka (formula), waxaan marka hore bedeli karnaa mawduuca (subject), ama qiimeyn karnaa tibaax (expression) halkaas oo mawduuca aan la beddelin. Labada hab waxay nasiinayaan natiijo isku mid ah. Waxaa na saaran inaan go'aamino marka uu hab kastaa ku habboon yahay.