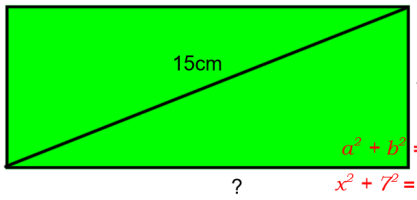
Lots of SHAPE 5 PLUS Answers in RED

This rectangle measures ?cm by 7cm.

The diagonal measures 15cm.

This is Pythagoras' because it is a right-angled triangle and 3 sides



$a^2 + b^2 = h^2$

$x^2 + 7^2 = 15^2$

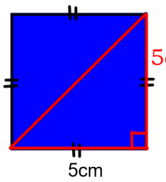
$x^2 + 49 = 225$

$x^2 = 225 - 49$

$x^2 = 176$

$x = \sqrt{176}$

Answer x=13.3 (to 1 dec pl)



This square has a side of 5cm.

What is the diagonal length?

This is Pythagoras' because it is a right-angled triangle and 3 sides

$a^2 + b^2 = h^2$

$5^2 + 5^2 = x^2$

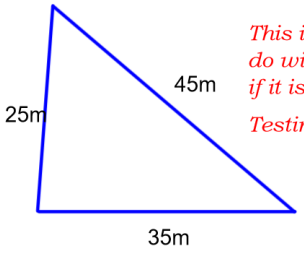
$25 + 25 = x^2$

$50 = x^2$

$\sqrt{50} = x$

x=7.1 (to 1 dec pl)

Is this a right-angled triangle?



This is Pythagoras' because it is to do with 3 sides and testing to find if it is a right-angled triangle

Testing $a^2 + b^2 = h^2$

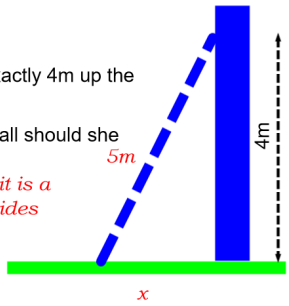
$25^2 + 35^2$	45^2
625 + 1225	2025
1850 is not equal	2025

Answer NO it is not right-angled.

Becky has a ladder 5m long.

She wants the ladder to reach exactly 4m up the vertical wall.

How far from the bottom of the wall should she put the foot of the ladder?



This is Pythagoras' because it is a right-angled triangle and 3 sides

$a^2 + b^2 = h^2$

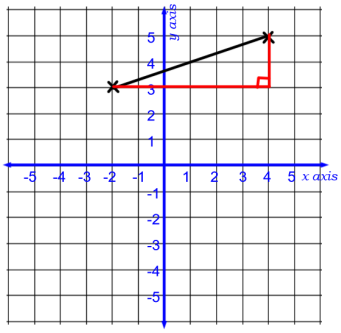
$x^2 + 4^2 = 5^2$

$x^2 + 16 = 25$

$x^2 = 25 - 16$

$x^2 = 9$

Answer x=3m



What is the length of line segment between

(4,5) and *(-2,3)*?

This is Pythagoras' because it is a right-angled triangle and 3 sides

$a^2 + b^2 = h^2$

$6^2 + 2^2 = h^2$

$36 + 4 = h^2$

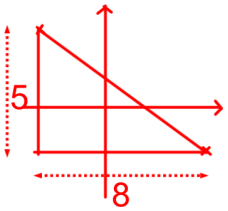
$h^2 = 40$

$h = \sqrt{40}$

Answer h=6.3 (to 1 dec pl)

What is the length of line segment between

(5,-2) and *(-3,3)*?



This is Pythagoras' because it is a right-angled triangle and 3 sides

$a^2 + b^2 = h^2$

$8^2 + 5^2 = h^2$

$64 + 25 = h^2$

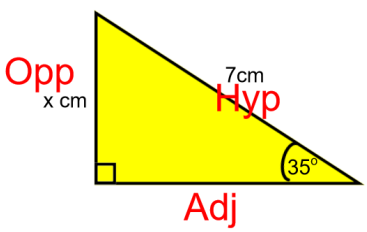
$h^2 = 89$

$h = \sqrt{89}$

Answer h=9.4 (to 1 dec pl)

Make sure your calculator is in DEG

Find the value of side x to 1 decimal place.



SOH CAH TOA

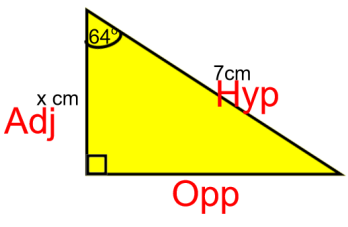
$\sin(35) = {}^{x}/_{7}$

$x = 7 \sin(35)$

$x = 4.0$ cm

Make sure your calculator is in DEG

Find the value of side x to 1 decimal place.



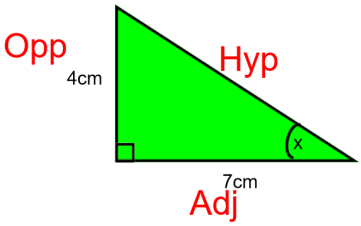
SOH CAH TOA

$\cos(64) = {}^{x}/_{7}$

$x = 7 \cos(64)$

$x = 3.1$ cm

Find the value of angle x to 1 decimal place.



Make sure your calculator is in DEG

SOH CAH TOA

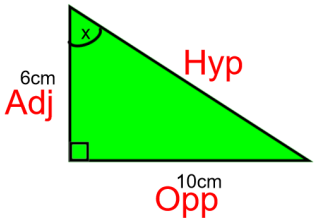
$tan(x) = {}^{4}/_{7}$

$x = tan^{-1}({}^{4}/_{7})$

$x = 29.7^{o}$

Make sure your calculator is in DEG

Find the value of x to 1 decimal place.



SOH CAH TOA

$tan(x) = {}^{10}/_{6}$

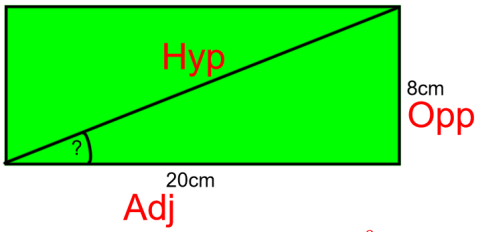
$x = tan^{-1}({}^{10}/_{6})$

$x = 59.0^{o}$

This rectangle measures 20cm by 8cm.

What is the angle ?

SOH CAH TOA



$tan(x) = {}^{8}/_{20}$

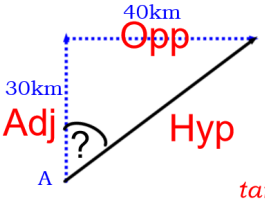
$x = tan^{-1}({}^{8}/_{20})$

$x = 21.8^{o}$ (1 dec place)

Ben sails from point A

He sails 30km North and then 40km East.

Find the bearing of the direct journey.



SOH CAH TOA

$tan(x) = {}^{40}/_{30}$

$x = tan^{-1}({}^{40}/_{30})$

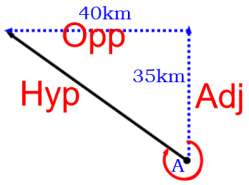
$x = 53.1^{o}$ (1 dec place)

Bearing is 053

Ben sails from point A

He sails 35km North and then 40km West

Find the bearing of the direct journey as indicated in the diagram



SOH CAH TOA

$tan(x) = {}^{40}/_{35}$

$x = tan^{-1}({}^{40}/_{35})$

$x = 48.8^{o}$ (1 dec place)

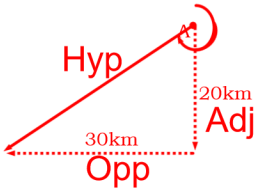
Bearing is 311

Ben sails from point A

He sails 20km South and then 30km West

Instead of taking 2 stages,

he could have travelled on what direct bearing?



SOH CAH TOA

$tan(x) = {}^{30}/_{20}$

$x = tan^{-1}({}^{30}/_{20})$

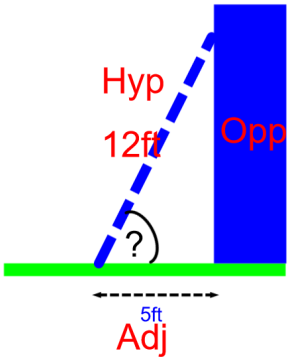
$x = 56.3^{o}$ (1 dec place)

Bearing is 236

Becky has a ladder 12 ft long.

She puts it 5ft away from a wall.

Find the angle ? in the diagram.



SOH CAH TOA

$cos(x) = {}^{5}/_{12}$

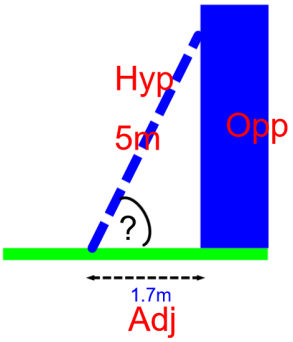
$x = cos^{-1}({}^{5}/_{12})$

$x = 65.4^{o}$ (1 dec place)

Becky has a ladder 5m long.

She puts it 1.7 away from a wall.

Find the angle ? in the diagram.



SOH CAH TOA

$cos(x) = {}^{1.7}/_{5}$

$x = cos^{-1}({}^{1.7}/_{5})$

$x = 70.1^{o}$ (1 dec place)