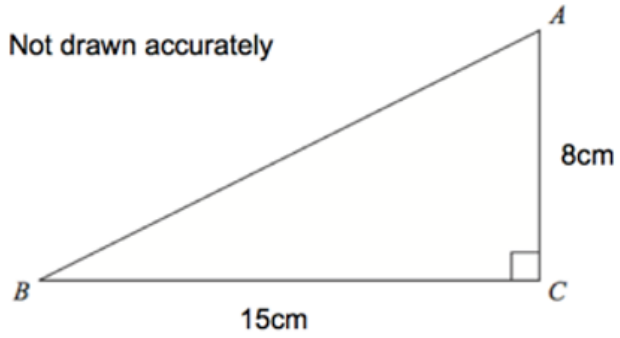
Week 10 Lesson 1 – Pythagoras Mark Scheme

1)



ABC is a right-angled triangle.
AC = 8cm.
BC = 15cm.

Calculate the length of AB.

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

$8^2+15^2=AB^2$

$64+225=AB^2$

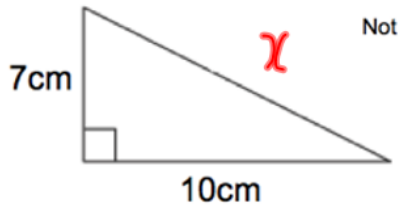
$289=AB^2$

$\sqrt{289}=$

17 cm

(3)

2)



Shown is a right-angled triangle.

Work out the perimeter of the triangle

$7^2+10^2=x^2$

$49+100=x^2$

$x^2=149$

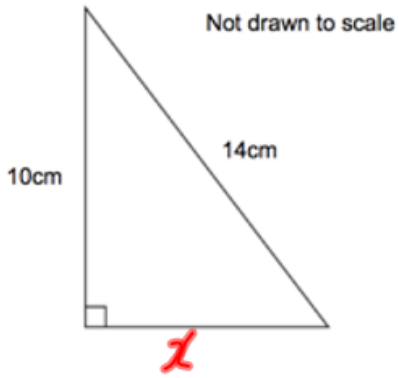
$\sqrt{149}=12.206..$

$7+10+12.206..$

29.2 cm

(4)

3)



Shown is a right-angled triangle.

Calculate the area of the triangle

$10^2 + x^2 = 14^2$

$100 + x^2 = 196$

$x^2 = 96$

$\sqrt{96} = 9.7979...$

$\frac{1}{2} \times 9.79... \times 10$

$= 48.98...$

48.99 ..... cm²

(4)

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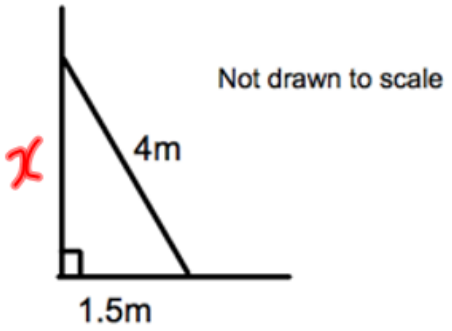
4)



A 4 metre ladder is placed against a vertical wall.
The base of the ladder is 1.5 metres from the base of the wall.

Work out how far the ladder reaches up the wall.

$1.5^2 + x^2 = 4^2$

$2.25 + x^2 = 16$

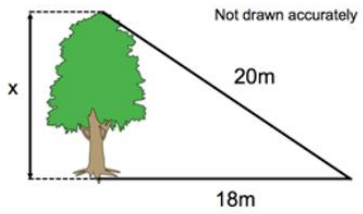
$x^2 = 13.75$

$x = \sqrt{13.75}$

3.708m

(3)

5)



The distance from a point on the ground to the base of a tree is 18 metres.
The distance from a point on the ground to the top of a tree is 20 metres.

Calculate the height of the tree.
Give the answer correct to 1 decimal place.

$x^2 + 18^2 = 20^2$

$x^2 + 324 = 400$

$x^2 = 76$

$x = 8.7177...$

8.7 ..... m

(3)