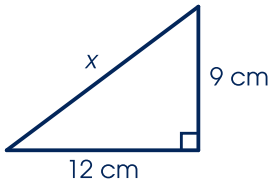
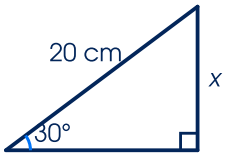
GCSE HIGHER · REVISION MAT 3

Pythagoras and trigonometry

1 Find the length of the hypotenuse.



2 Find the length x.



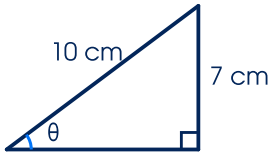
3 Explain why the hypotenuse is always the longest side of a right-angled triangle.

4 A ramp rises 1.2 m over a horizontal distance of 5 m.

How long is the ramp?

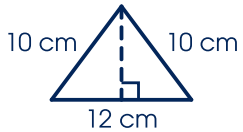


5 Show that $\theta = 44.4°$, to 1 d.p.



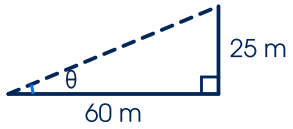
6 An isosceles triangle has sides 10 cm, 10 cm and 12 cm.

Find its area.

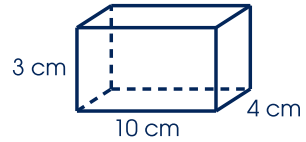


7 A tower is 25 m tall.

Show that its angle of elevation from a point 60 m away on level ground is 22.6°.



8 A cuboid is 10 cm by 4 cm by 3 cm.



Find the angle between a space diagonal and the base.

Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Pythagoras and trigonometry

1 $\sqrt{144 + 81} = \sqrt{225}$

15 cm

2 $x = 20 \sin 30°$

10 cm

3 $c^2 = a^2 + b^2$, so c^2 is bigger than a^2 and b^2.

4 $\sqrt{25 + 1.44}$

5.14 m

5 $\sin \theta = 0.7$

θ = 44.4°

6 Height $\sqrt{100 - 36} = 8$ cm

$\frac{1}{2} \times 12 \times 8 = 48$ cm²

7 $\tan \theta = \frac{25}{60}$

θ = 22.6°

8 Base diagonal $\sqrt{116} = 10.77$

$\tan \theta = \frac{3}{10.77}$

15.6°

Mr&Mrs MATHS