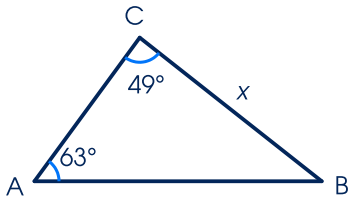
GCSE HIGHER · REVISION MAT 5

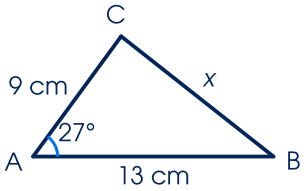
Sine and cosine rules

1 Find x.



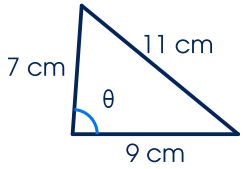
AB = 9 cm

2 Find x.



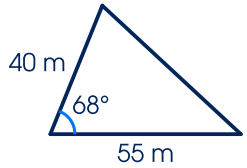
3 A triangle has sides 7 cm, 9 cm and 11 cm.

Show that its largest angle, θ, is 85.9°.

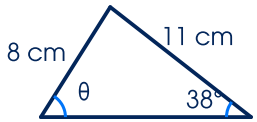


4 A triangular field is shown.

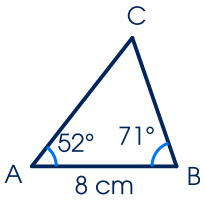
How long is the third side?



5 Show that θ = 57.8° (acute).

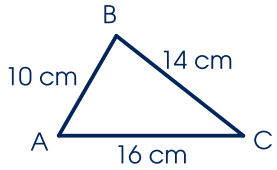


6 Find AC and BC.



7 Explain why the cosine rule gives one angle but the sine rule can give two.

8 Find the area of triangle ABC.



ANSWERS · REVISION MAT 5

Sine and cosine rules

1 $\frac{x}{\sin 63°} = \frac{9}{\sin 49°}$

x = 10.6 cm

2 $x^2 = 81 + 169 - 234 \cos 27°$

x = 6.44 cm

3 $\cos \theta = \frac{49 + 81 - 121}{126}$

θ = 85.9°

4 $\sqrt{1600 + 3025 - 4400 \cos 68°}$

54.6 m

5 $\sin \theta = \frac{11 \sin 38°}{8}$

θ = 57.8°

6 Angle C = 57°

AC = 9.02 cm

BC = 7.52 cm

7 **Each cosine value gives one angle from 0° to 180°; a sine value gives θ and 180° − θ.**

8 $\cos A = \frac{100 + 256 - 196}{320} = 0.5$

A = 60°

Area = $\frac{1}{2} \times 10 \times 16 \times \sin 60°$

Area = 69.3 cm²