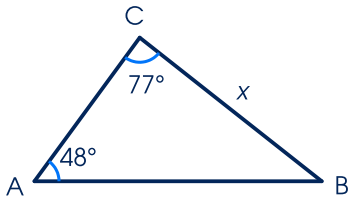
GCSE HIGHER · REVISION MAT 3

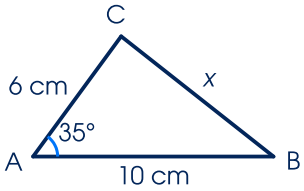
Sine and cosine rules

1 Find x.



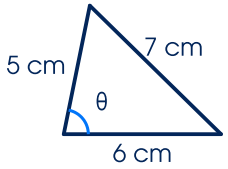
AB = 20 cm

2 Find x.



3 A triangle has sides 5 cm, 6 cm and 7 cm.

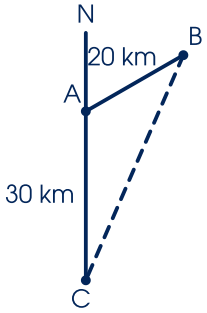
Show that its largest angle, θ, is 78.5°.



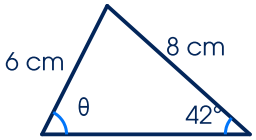
4 B is 20 km from A on a bearing of 060°.

C is 30 km from A on a bearing of 180°.

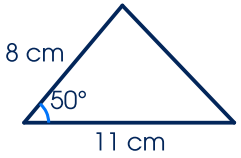
How far is B from C?



5 Show that one possible value of θ is 63.1°.

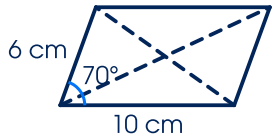


6 Find the third side and the smallest angle.



7 Explain when you would use the sine rule rather than the cosine rule.

8 Find the lengths of both diagonals of this parallelogram.



ANSWERS · REVISION MAT 3

Sine and cosine rules

1 $\frac{x}{\sin 48°} = \frac{20}{\sin 77°}$

x = 15.3 cm

2 $x^2 = 36 + 100 - 120 \cos 35°$

x = 6.14 cm

3 $\cos \theta = \frac{25 + 36 - 49}{60}$

θ = 78.5°

4 Angle BAC = 120°

$BC^2 = 400 + 900 + 600$

43.6 km

5 $\sin \theta = \frac{8 \sin 42°}{6}$

θ = 63.1° (or 116.9°)

6 Third side 8.48 cm

$\sin \theta = \frac{8 \sin 50°}{8.48}$

8.48 cm; 46.3°

7 **Sine rule: you know an angle and its opposite side. Cosine rule: two sides and the included angle, or all three sides.**

8 $\sqrt{136 - 120 \cos 70°}$ and $\sqrt{136 + 120 \cos 70°}$

9.74 cm and 13.3 cm