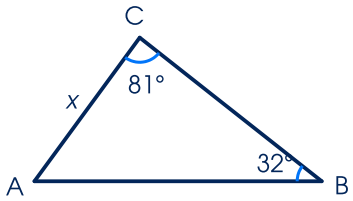
GCSE HIGHER · REVISION MAT 4

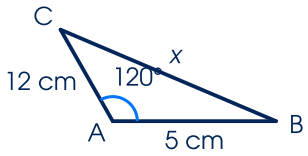
Sine and cosine rules

1 Find x.

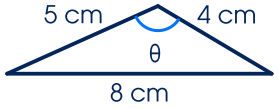


AB = 14 cm

2 Find x.

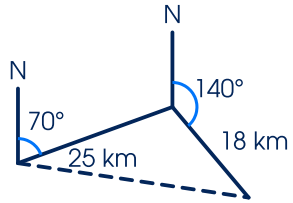


3 Show that $\theta = 125.1°$.

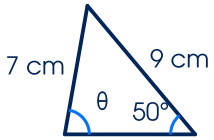


4 A ship sails 25 km on a bearing of 070°, then 18 km on a bearing of 140°.

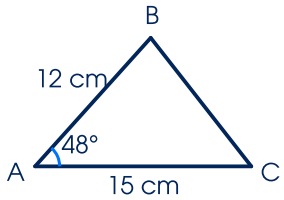
How far is it from its start?



5 Show that $\theta = 80.0°$ (acute).



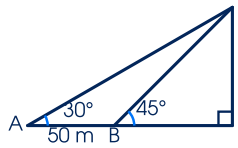
6 Find BC and angle B.



7 Explain why no triangle has sides 3 cm, 4 cm and 8 cm.

8 A and B are 50 m apart, in line with a tower.

Find the height of the tower.



Mr&Mrs MATHS

ANSWERS · REVISION MAT 4

Sine and cosine rules

1 $\frac{x}{\sin 32°} = \frac{14}{\sin 81°}$

x = 7.51 cm

2 $x^2 = 144 + 25 - 120 \cos 120°$

x = 15.1 cm

3 $\cos \theta = \frac{16 + 25 - 64}{40} < 0$

θ = 125.1°

4 Angle at the turn = 110°

$d^2 = 625 + 324 - 900 \cos 110°$

35.5 km

5 $\sin \theta = \frac{9 \sin 50°}{7}$

θ = 80.0°

6 **BC = 11.3 cm**

$\sin C = \frac{12 \sin 48°}{11.32}$, C = 52.0°

B = 80.0°

7 **3 + 4 < 8**

The cosine rule would give $\cos \theta > 1$.

8 Angle at the top = 15°

Sine rule for the slant from B

Height 68.3 m