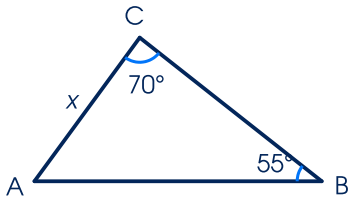
GCSE HIGHER · REVISION MAT 2

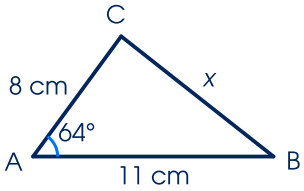
Sine and cosine rules

1 Find x.



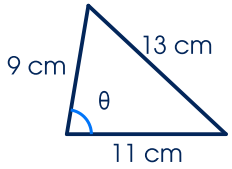
AB = 15 cm

2 Find x.



3 A triangle has sides 9 cm, 11 cm and 13 cm.

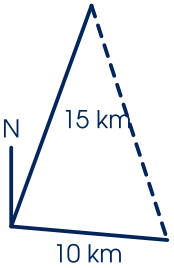
Show that its largest angle, θ, is 80.4°.



4 One boat sails 15 km on a bearing of 020°.

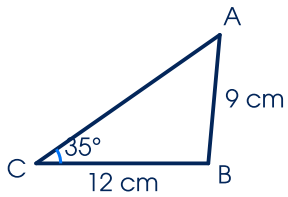
Another sails 10 km on a bearing of 095° from the same harbour.

How far apart are they?

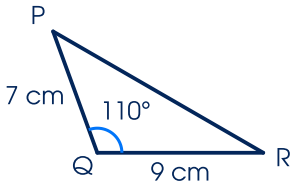


5 In triangle ABC, AB = 9 cm, BC = 12 cm and angle C = 35°.

Show that the acute value of angle A is 49.9°.



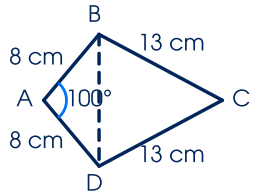
6 Find PR and the area of triangle PQR.



7 Explain why the cosine rule becomes Pythagoras' theorem when the angle is 90°.

8 ABCD is a kite.

Find BD and angle BCD.



ANSWERS · REVISION MAT 2

Sine and cosine rules

1 $\frac{x}{\sin 55°} = \frac{15}{\sin 70°}$

x = 13.1 cm

2 $x^2 = 121 + 64 - 176 \cos 64°$

x = 10.4 cm

3 $\cos \theta = \frac{81 + 121 - 169}{198}$

θ = 80.4°

4 Angle between = 75°

$d^2 = 225 + 100 - 300 \cos 75°$

15.7 km

5 $\sin A = \frac{12 \sin 35°}{9}$

A = 49.9°

6 $PR^2 = 49 + 81 - 126 \cos 110°$

PR = 13.2 cm

Area = $\frac{1}{2} \times 7 \times 9 \times \sin 110°$

Area = 29.6 cm²

7 **$\cos 90° = 0$, so $a^2 = b^2 + c^2 - 0$.**

8 $BD^2 = 128 - 128 \cos 100°$

BD = 12.3 cm

$\cos C = \frac{338 - 150.2}{338}$

Angle BCD = 56.3°

Mr&Mrs MATHS