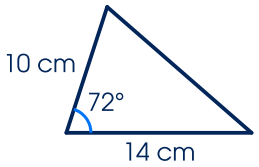
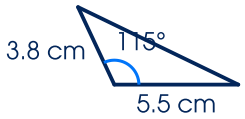
GCSE HIGHER · REVISION MAT 4

Area of a triangle using ½ab sin C

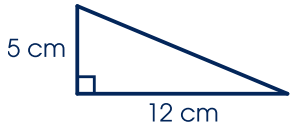
1 Find the area of this triangle.



2 Find the area of this triangle.

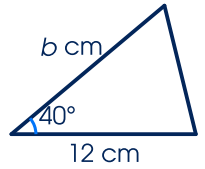


3 Show that $\frac{1}{2}ab \sin C$ gives an area of 30 cm² for this triangle.

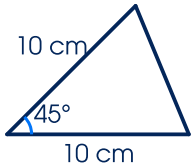


4 The area of this triangle is 50 cm².

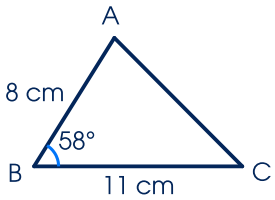
Find b.



5 Show that the area of this triangle is $25\sqrt{2}$ cm².



6 Find AC and the area of triangle ABC.



7 Explain why you must use the angle between the two sides in $\frac{1}{2}ab \sin C$.

8 Find the area of this regular pentagon.



ANSWERS · REVISION MAT 4

Area of a triangle using ½ab sin C

1 $70 \sin 72°$

66.6 cm²

2 $\frac{1}{2} \times 3.8 \times 5.5 \times \sin 115°$

9.47 cm²

3 $30 \sin 90°$

= 30

4 $6b \sin 40° = 50$

***b* = 13.0 cm**

5 $50 \sin 45° = 50 \times \frac{\sqrt{2}}{2}$

$= 25\sqrt{2}$

6 $AC^2 = 64 + 121 - 176 \cos 58°$

AC = 9.58 cm

Area = 44 sin 58° = 37.3 cm²

7 ***b* sin C is the height only when C is the angle between sides *a* and *b*.**

8 Centre to vertex:

$\frac{3}{\sin 36°} = 5.10$ cm

$5 \times \frac{1}{2} \times 5.10^2 \times \sin 72°$

61.9 cm²

Mr&Mrs MATHS