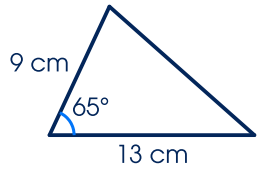
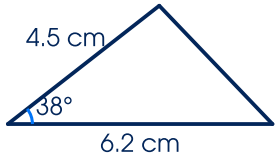
GCSE HIGHER · REVISION MAT 3

Area of a triangle using ½ab sin C

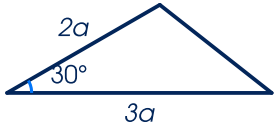
1 Find the area of this triangle.



2 Find the area of this triangle.

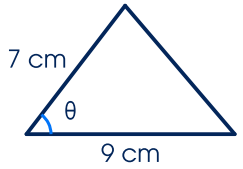


3 Show that the area of this triangle is $1.5a^2$.

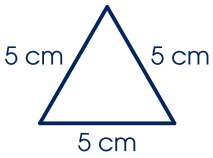


4 A triangle has sides 7 cm and 9 cm and area 25 cm².

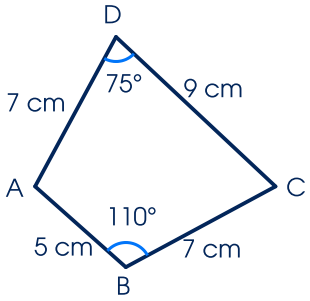
Find both possible values of θ.



5 Show that the area of this equilateral triangle is $\frac{25\sqrt{3}}{4}$ cm².



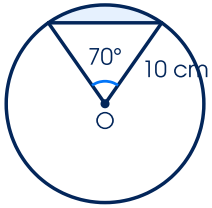
6 Find the area of quadrilateral ABCD.



7 Explain why, for fixed sides a and b, the area is greatest when the included angle is 90°.

8 O is the centre of the circle.

Find the area of the shaded segment.



Mr&Mrs MATHS

ANSWERS · REVISION MAT 3

Area of a triangle using ½ab sin C

1 $\frac{1}{2} \times 9 \times 13 \times \sin 65°$

53.0 cm²

2 $\frac{1}{2} \times 4.5 \times 6.2 \times \sin 38°$

8.59 cm²

3 $\frac{1}{2} \times 6a^2 \times 0.5$

$= 1.5a^2$

4 $\sin C = \frac{50}{63} = 0.794$

52.5° or 127.5°

5 $\frac{1}{2} \times 25 \times \frac{\sqrt{3}}{2}$

$= \frac{25\sqrt{3}}{4}$

6 $\frac{1}{2} \times 5 \times 7 \times \sin 110° = 16.44$

$\frac{1}{2} \times 7 \times 9 \times \sin 75° = 30.43$

46.9 cm²

7 **sin C has its largest value, 1, at 90°.**

8 Sector $\frac{70}{360} \times 100\pi = 61.09$

Triangle $50 \sin 70° = 46.98$

14.1 cm²

Mr&Mrs MATHS