

Area of a Triangle Using Sine

For AQA GCSE Mathematics (8300) • Higher tier

Name _____

Total marks: **26**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator. Diagrams are not drawn accurately.

- 1** In triangle ABC , a and b are two sides and C is the angle between them.
Which of these is the area of the triangle?
Circle your answer.

[1 mark]

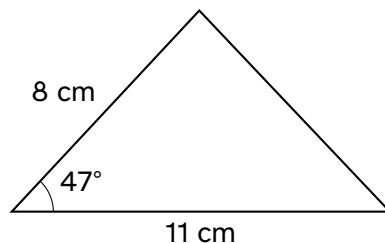
$ab \sin C$

$\frac{1}{2}ab \sin C$

$\frac{1}{2}ab \cos C$

$\frac{1}{2}ab$

- 2** Here is a triangle.



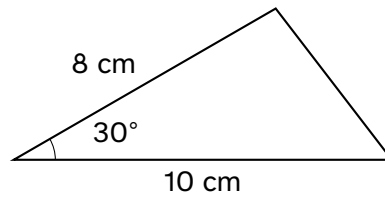
Not drawn accurately

Work out the area of the triangle.
Give your answer to 3 significant figures.

[2 marks]

Answer _____ cm^2

- 3 Here is a triangle.



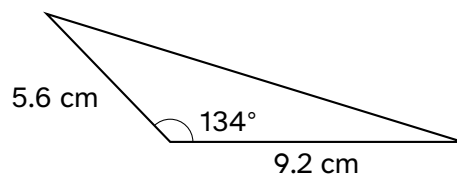
Not drawn accurately

$$\sin 30^\circ = 0.5$$

Show that the area of the triangle is 20 cm^2

[2 marks]

- 4 Here is a triangle.



Not drawn accurately

Work out the area of the triangle.

Give your answer to 3 significant figures.

[2 marks]

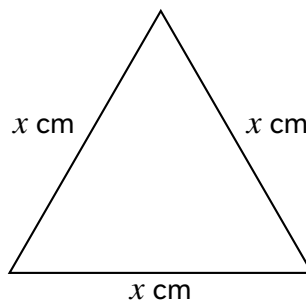
Answer _____ cm^2

- 5 A patio is in the shape of a triangle PQR .
 $PQ = 3.2$ m and $PR = 4.5$ m. Angle QPR is obtuse.
The area of the patio is 6.1 m^2 .
Work out the size of angle QPR .
Give your answer to 1 decimal place.

[3 marks]

Answer _____ degrees

- 6 Here is an equilateral triangle.



Not drawn accurately

The area of the triangle is 50 cm^2 .
Work out the length of one side.
Give your answer to 3 significant figures.

[3 marks]

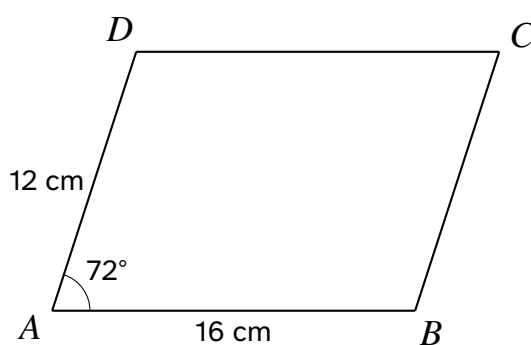
Answer _____ cm

- 7 Work out the area of a regular hexagon with sides of 6 cm.
Give your answer to 3 significant figures.

[3 marks]

Answer _____ cm^2

- 8 $ABCD$ is a parallelogram.



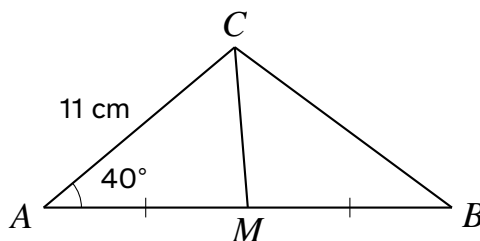
Not drawn accurately

Work out the area of the parallelogram.
Give your answer to 3 significant figures.

[3 marks]

Answer _____ cm^2

- 9 ABC is a triangle.



Not drawn accurately

$AB = 18$ cm, $AC = 11$ cm and angle $BAC = 40^\circ$

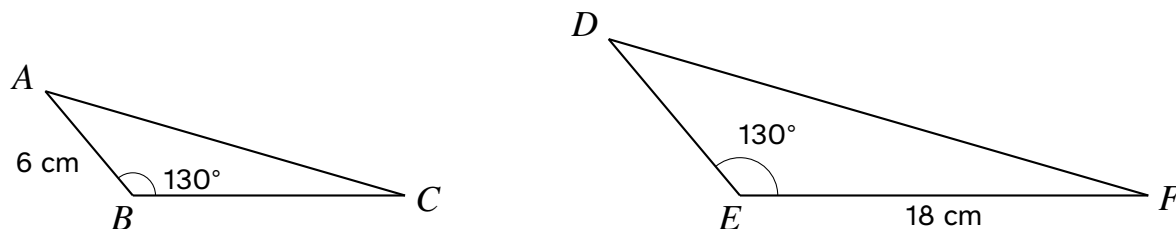
M is the midpoint of AB .

Work out the area of triangle AMC .

[3 marks]

Answer _____ cm^2

- 10 Here are two triangles.



Not drawn accurately

Triangles ABC and DEF are similar.

$AB = 6$ cm, angle $ABC = \text{angle } DEF = 130^\circ$ and $EF = 18$ cm

The area of triangle ABC is 27.58 cm^2

Work out the area of triangle DEF .

[4 marks]

Answer _____ cm^2