

Mixed Sine and Cosine Rule Problems

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** For each triangle, tick the rule you would use to work out the missing value.

[2 marks]

	Sine rule	Cosine rule
Two sides and the angle between them are known. Work out the third side.	☐	☐
Two angles and one side are known. Work out another side.	☐	☐
All three sides are known. Work out an angle.	☐	☐

- 2** A triangle has sides 6 cm and 10 cm with an included angle of 40°
Work out the perimeter of the triangle.

[4 marks]

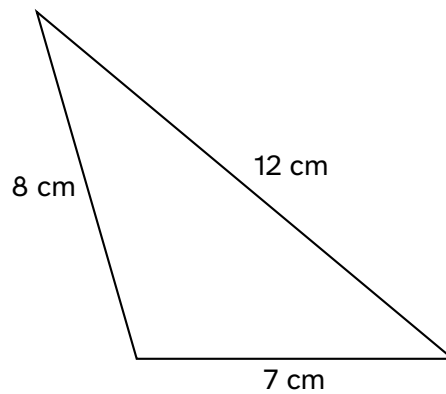
Answer _____ cm

- 3 In triangle XYZ , $XY = 9$ cm, angle $X = 42^\circ$ and angle $Y = 73^\circ$
Work out the area of the triangle.

[4 marks]

Answer _____ cm^2

- 4 A triangle has sides 7 cm, 8 cm and 12 cm.



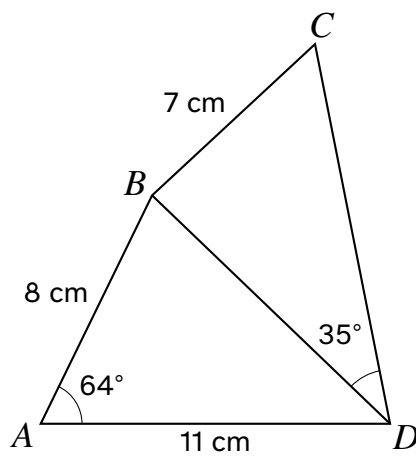
Not drawn accurately

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

[4 marks]

Answer _____ cm^2

- 5 $ABCD$ is a quadrilateral.
 $AB = 8$ cm, $AD = 11$ cm, angle $BAD = 64^\circ$
 $BC = 7$ cm and angle $BDC = 35^\circ$
Angle BCD is acute.



Not drawn accurately

- (a) Work out the length BD .

[3 marks]

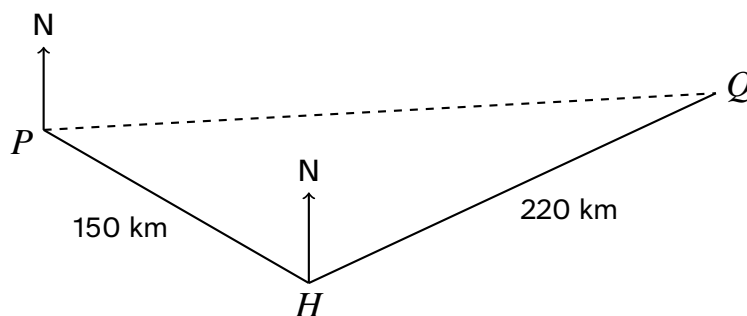
Answer _____ cm

- (b) Work out the size of angle BCD .

[3 marks]

Answer _____ degrees

- 6** A helicopter is based at H .
 Oil platform P is 150 km from H on a bearing of 300°
 Oil platform Q is 220 km from H on a bearing of 065°



Not drawn accurately

- (a) Show that the distance from P to Q is 330 km to the nearest km.
 You must show your working.

[2 marks]

- (b) The helicopter flies directly from P to Q .
 Work out the bearing of Q from P .

[4 marks]

Answer _____ degrees