

Mixed Sine and Cosine Rule Problems

For Pearson Edexcel GCSE Mathematics (1MA1) • Higher tier

Name _____

Total marks: **30**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method. You may use a calculator.

1 Here is triangle PQR .

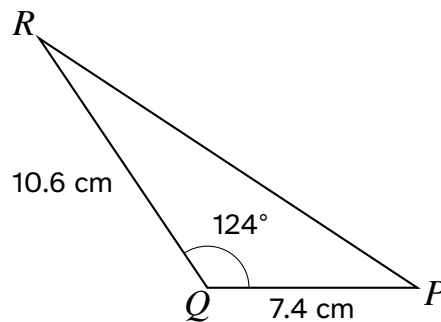


Diagram **NOT** accurately drawn

- (a) Work out the area of triangle PQR .
Give your answer correct to 3 significant figures.

..... cm²
(2)

- (b) Work out the length of PR .
Give your answer correct to 3 significant figures.

..... cm
(3)

(Total for Question 1 is 5 marks)

- 2** DEF is a triangle. $DE = 7$ cm, $DF = 11$ cm and angle $DEF = 105^\circ$
Work out the length of EF .
Give your answer correct to 3 significant figures.

..... cm
(5)

(Total for Question 2 is 5 marks)

- 3** A field ABC is a triangle where $AB = 85$ m, $AC = 120$ m and angle $BAC = 72^\circ$
Fencing costs £8.50 per metre.
Work out the cost of fencing the whole perimeter of the field.

£
(5)

(Total for Question 3 is 5 marks)

- 4 The diagram shows the positions of two coastguard stations and a ship.

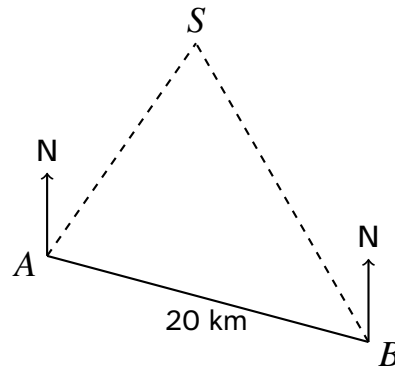


Diagram **NOT** accurately drawn

A and B are two coastguard stations. B is 20 km from A on a bearing of 105°
 A ship, S , is on a bearing of 035° from A and on a bearing of 330° from B
 A lifeboat travels in a straight line from B to the ship at an average speed of 24 km/h.
 Work out how long the lifeboat takes to reach the ship.
 Give your answer to the nearest minute.
 You must show all your working.

..... minutes
 (5)

(Total for Question 4 is 5 marks)

- 5 The diagram shows triangle PQR .

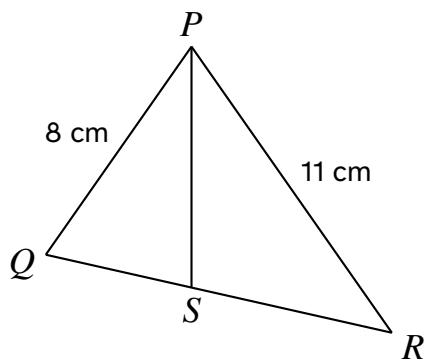


Diagram **NOT** accurately drawn

$PQ = 8\text{ cm}$, $PR = 11\text{ cm}$ and angle $QPR = 70^\circ$
 S is the point on QR such that angle $QPS = \text{angle } SPR$.
Work out the length of PS .
Give your answer correct to 3 significant figures.
You must show all your working.

..... cm
(5)

(Total for Question 5 is 5 marks)

- 6 The diagram shows a plot of land $ABCD$.

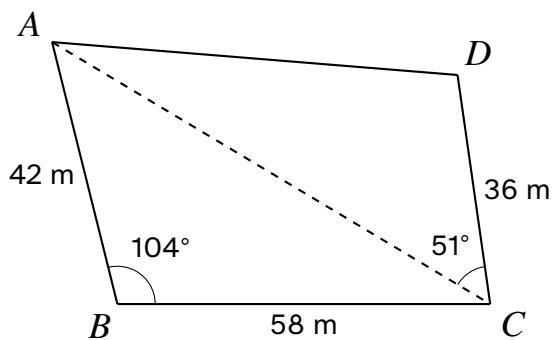


Diagram **NOT** accurately drawn

$AB = 42$ m, $BC = 58$ m and angle $ABC = 104^\circ$

$CD = 36$ m and angle $ACD = 51^\circ$

Work out the area of the plot of land.

Give your answer correct to 3 significant figures.

..... m^2
(5)

(Total for Question 6 is 5 marks)