

The Sine Rule

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

Name _____

Total marks: **29**

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

1 Here is a triangle.

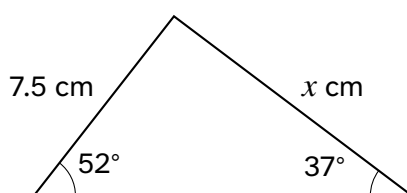


Diagram **NOT** accurately drawn

Work out the value of x .

Give your answer correct to 3 significant figures.

$x =$
(2)

(Total for Question 1 is 2 marks)

2 ABC is a triangle.

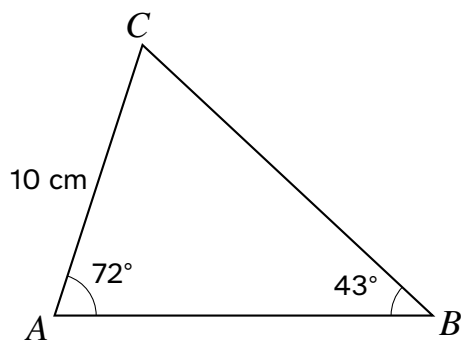


Diagram **NOT** accurately drawn

Work out the length of BC .

Give your answer correct to 3 significant figures.

..... cm
(3)

(Total for Question 2 is 3 marks)

- 3 Here is a triangle.

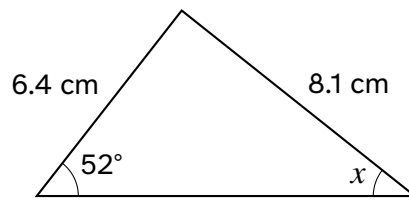


Diagram **NOT** accurately drawn

Work out the size of angle x .
Give your answer correct to 1 decimal place.

..... °
(3)

(Total for Question 3 is 3 marks)

- 4 In triangle PQR , $PQ = 7.2$ cm, $QR = 9.5$ cm and angle $QPR = 64^\circ$
Find the size of angle PRQ .
Give your answer correct to 1 decimal place.

..... °
(3)

(Total for Question 4 is 3 marks)

- 5 The diagram shows a triangular sail PQR .

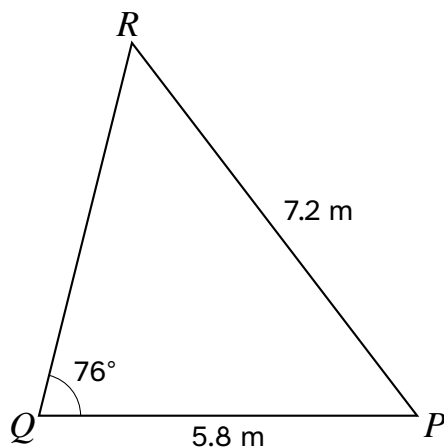


Diagram **NOT** accurately drawn

$PQ = 5.8$ m, $PR = 7.2$ m and angle $PQR = 76^\circ$

Calculate the length of QR .

Give your answer correct to 3 significant figures.

..... m
(5)

(Total for Question 5 is 5 marks)

- 6 The diagram shows the positions of A , B and L .

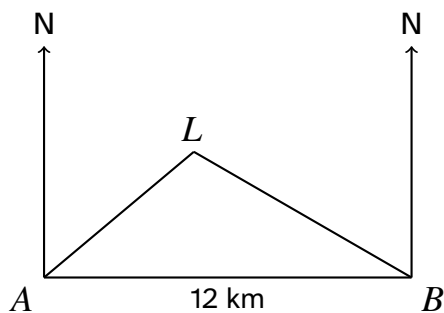


Diagram **NOT** accurately drawn

Two ships, A and B , are 12 km apart. A is due West of B .
A lighthouse L is on a bearing of 050° from A and on a bearing of 300° from B .
Work out the distance AL .
Give your answer correct to 3 significant figures.

..... km
(4)

(Total for Question 6 is 4 marks)

7 Here is a diagram.

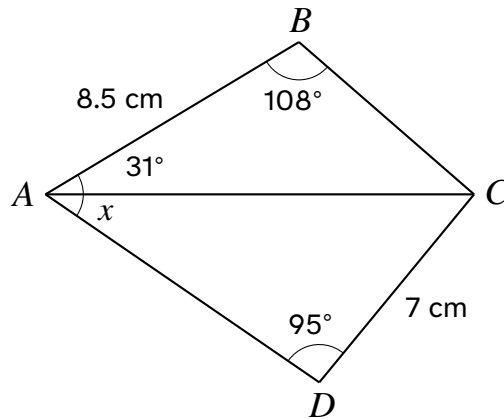


Diagram **NOT** accurately drawn

$ABCD$ is a quadrilateral.

$AB = 8.5$ cm, angle $ABC = 108^\circ$ and angle $BAC = 31^\circ$

$CD = 7$ cm and angle $ADC = 95^\circ$

Calculate the size of angle CAD , marked x .

Give your answer correct to 1 decimal place.

You must show all your working.

..... °
(4)

(Total for Question 7 is 4 marks)

- 8 The diagram shows a tower on horizontal ground.

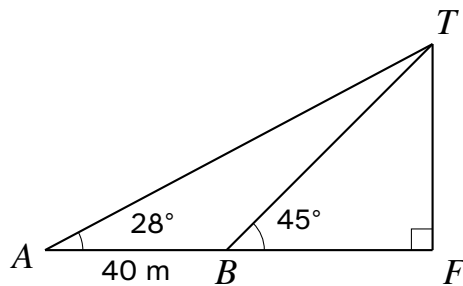


Diagram **NOT** accurately drawn

A , B and F lie on a straight line on horizontal ground. TF is a vertical tower.

Angle $TAF = 28^\circ$ and angle $TBF = 45^\circ$

$AB = 40$ m

Work out the height of the tower.

Give your answer correct to 3 significant figures.

..... m
(5)

(Total for Question 8 is 5 marks)