



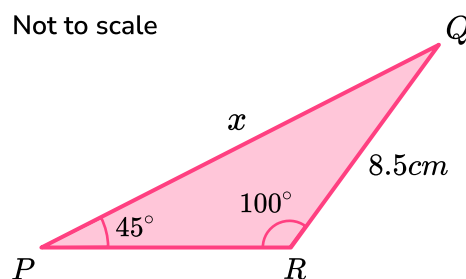
THIRD SPACE
LEARNING

GCSE Exam Questions

Sine Rule | Geometry &
Measure

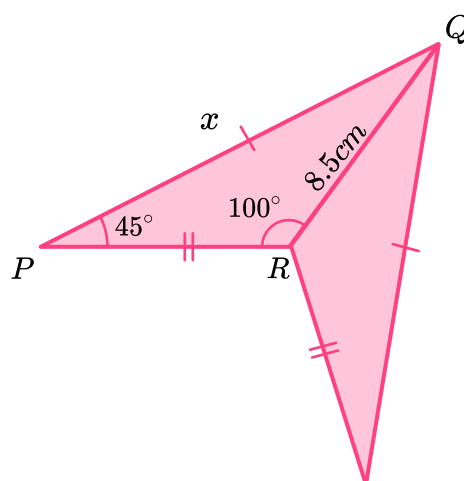
GCSE Exam Questions: Sine Rule

- 1) (a) Work out the length of side PQ , correct to 2 decimal places.



(2)

- (b) Using your solution to part (a), calculate the perimeter of the arrowhead $PQSR$.

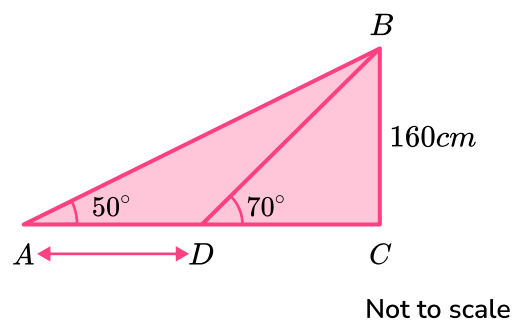


(4)

(6 marks)

GCSE Exam Questions: Sine Rule

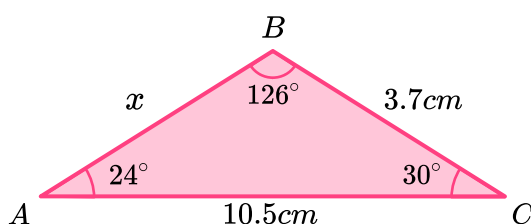
- 2) A firework explodes in the air at B , 160m directly above C . Two people watch it explode from A and D .



What is the distance between A and D .

(4 marks)

- 3) (a) To the right is a triangle ABC .



Circle the correct equation.

$$\frac{\sin(x)}{30} = \frac{10.5}{\sin(126)} \quad \frac{x}{\sin(30)} = \frac{3.7}{\sin(126)}$$

$$\frac{x}{\sin(30)} = \frac{3.7}{\sin(24)} \quad \frac{\sin(30)}{x} = \frac{\sin(126)}{\sin(24)}$$

(1)

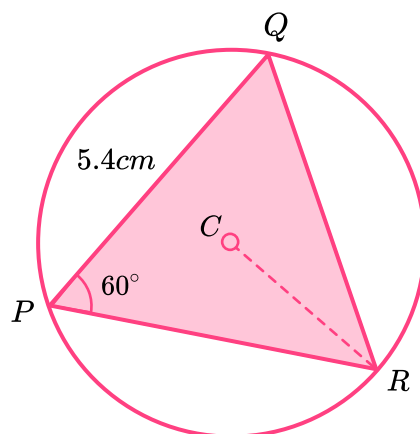
- (b) Hence or otherwise, calculate the value for x .

(1)

(2 marks)

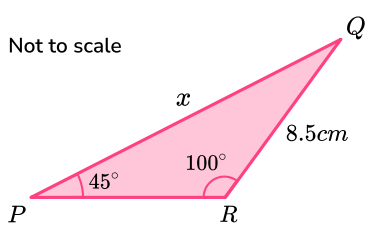
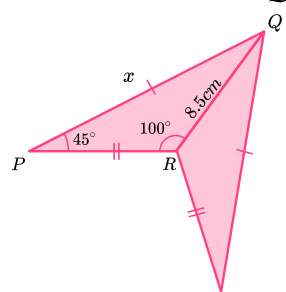
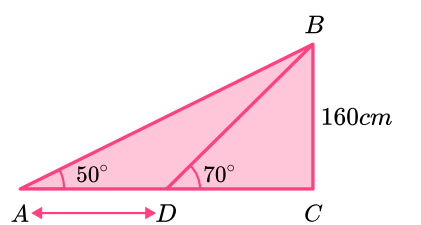
GCSE Exam Questions: Sine Rule

- 4) The equilateral triangle PQR is inscribed in a circle with centre C .
Calculate the radius of the circle.

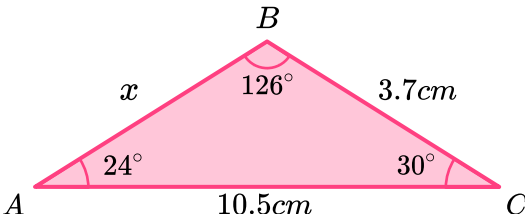
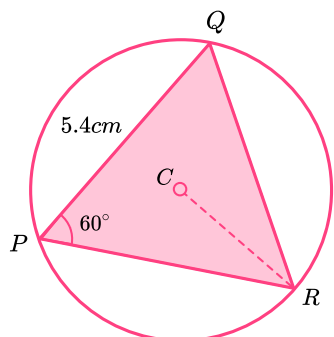
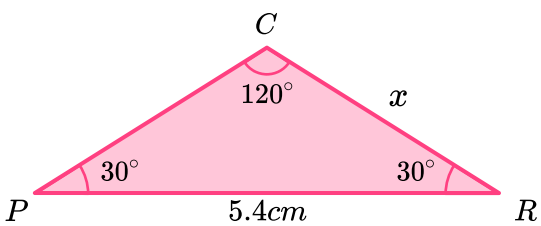


(4 marks)

GCSE Exam Questions: Sine Rule Answers

	Question	Answer	Marks
1) (a)	Work out the length of side PQ, correct to 2 decimal places. Not to scale 	$\frac{x}{\sin(100)} = \frac{8.5}{\sin(45)}$ 11.84 cm (2dp)	(1) (1)
(b)	Using your solution to part (a), calculate the perimeter of the arrowhead $PQSR$. 	$\frac{PR}{\sin(35)} = \frac{8.5}{\sin(45)}$ $PR = 6.89\dots$ Perimeter = $2 \times (6.89 + 11.84)$ 37.5 cm (1dp)	(1) (1) (1) (1)
2)	A firework explodes in the air at B, 160m directly above C. Two people watch it explode from A and D.  Not to scale What is the distance between A and D.	$\sin(70) = \frac{160}{BD}$ $BD = 170.268\dots$ $\frac{AD}{\sin(20)} = \frac{170.268\dots}{\sin(50)}$ 76.02 m	(1) (1) (1) (1)

GCSE Exam Questions: Sine Rule Answers

	Question	Answer	Marks
3) (a)	Below is a triangle ABC.  Circle the correct equation. $\frac{\sin(x)}{30} = \frac{10.5}{\sin(126)} \quad \frac{x}{\sin(30)} = \frac{3.7}{\sin(126)}$ $\frac{x}{\sin(30)} = \frac{3.7}{\sin(24)} \quad \frac{\sin(30)}{x} = \frac{\sin(126)}{\sin(24)}$	$\frac{x}{\sin(30)} = \frac{3.7}{\sin(24)}$	(1)
(b)	Hence or otherwise, calculate the value for x .	$x = 4.55 \text{ cm (2dp)}$	(1)
4)	The equilateral triangle PQR is inscribed in a circle with centre C. Calculate the radius of the circle. 	 Angles $120^\circ, 30^\circ, 30^\circ$ seen $PR = 5.4\text{cm}$ $\frac{x}{\sin(30)} = \frac{5.4}{\sin(120)}$ $r = 3.12 \text{ cm (3sf)}$	(1) (1) (1) (1)

Where to go next?

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