



Maths-it Podcast H-14

Higher GCSE Revision

Pythagoras rule and trigonometry

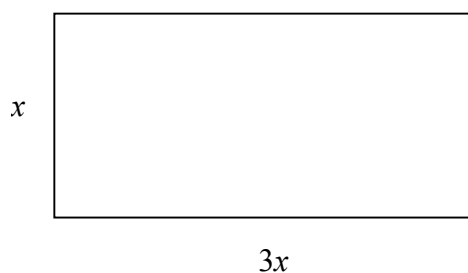
Topics

Pythagoras rule – Trigonometry, finding sides and angles – Trig graphs – Sine and cosine rule
Area of a triangle

Questions

1. The length of a rectangle is three times the width of the rectangle.
The length of a diagonal of the rectangle is 10 m.

Work out the area of the rectangle.
Give your answer as an integer.



..... cm²
(Total 3 marks)

- 2.

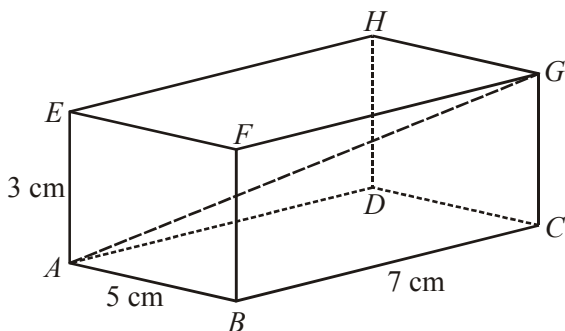


Diagram NOT
accurately drawn

The diagram represents a cuboid $ABCDEFGH$.

- $AB = 5$ cm.
- $BC = 7$ cm.
- $AE = 3$ cm.

- (a) Calculate the length of AG .
Give your answer correct to 3 significant figures.

..... cm

(2)



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- (b) Calculate the size of the angle between AG and the face $ABCD$.
Give your answer correct to 1 decimal place.

.....°

(2)

(Total 4 marks)

3.

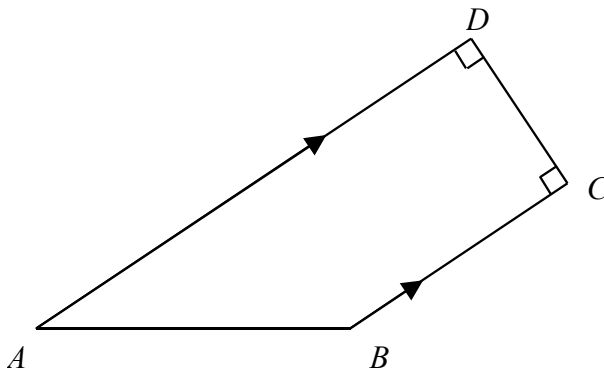


Diagram **NOT** accurately drawn

$ABCD$ is a trapezium.

AD is parallel to BC .

Angle $C = \text{angle } D = 90^\circ$.

$AD = 5.1 \text{ m}$, $AB = 4.6 \text{ m}$, $CD = 3.2 \text{ m}$.

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

..... m

(4)



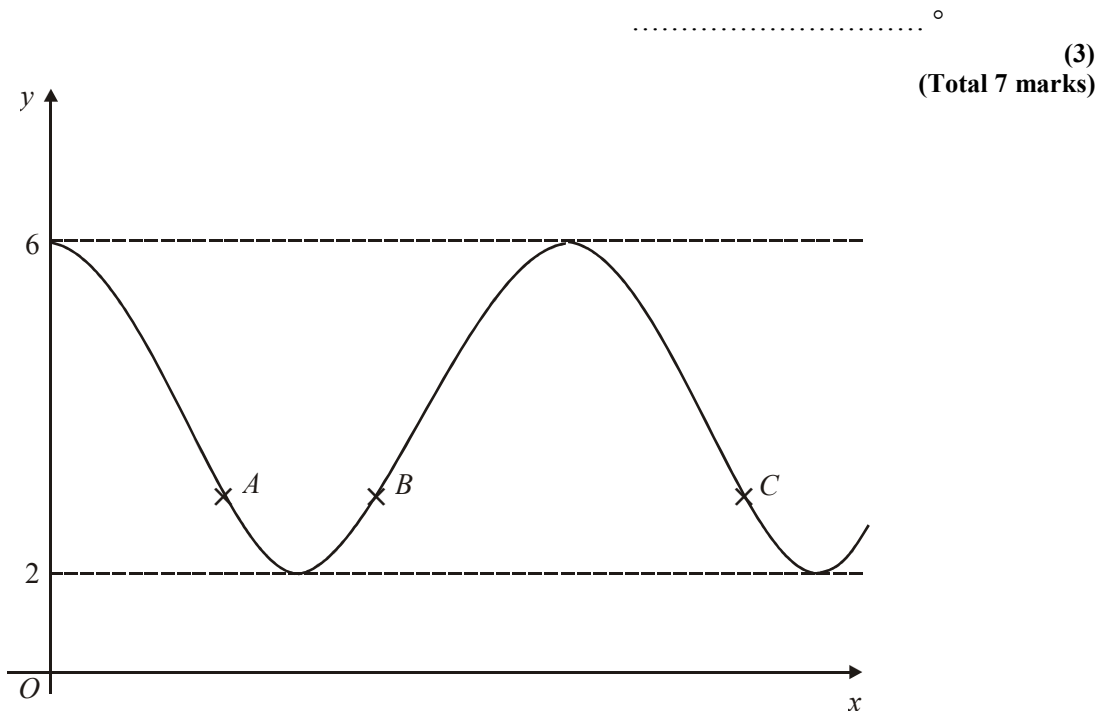
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- (b) Calculate the size of angle DAB

4.



The diagram shows a sketch of part of the curve with equation $y = p + q \sin(x + 90)^\circ$, where p and q are integers.

- (a) Find the value of p and the value of q .

$$p = \dots\dots\dots$$

$$q = \dots\dots\dots$$

(2)

- (b) The line $y = 3$ intersects the curve $y = p + q \sin(x + 90)^\circ$ at the points A , B and C . Point A has coordinates $(120, 3)$.

Find

- (i) the co-ordinates of the point B .

$$\dots(\dots\dots, \dots\dots)\dots$$

- (ii) the co-ordinates of the point C .

$$\dots(\dots\dots, \dots\dots)\dots$$

(2)

(Total 4 marks)

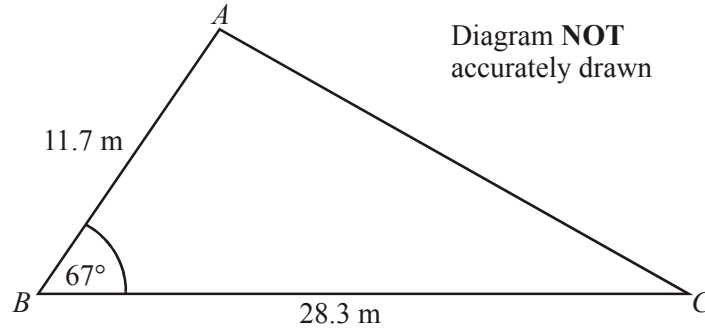


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5.



$AB = 11.7$ m.
 $BC = 28.3$ m.
Angle $ABC = 67^\circ$.

- (a) Calculate the area of the triangle ABC .
Give your answer correct to 3 significant figures.

..... m^2 (2)

- (b) Calculate the length of AC .
Give your answer correct to 3 significant figures.

..... m (3)

- (c) Calculate the size of angle ACB .
Give your answer correct to 3 significant figures.

..... $^\circ$ (3)
(Total 8 marks)



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6.

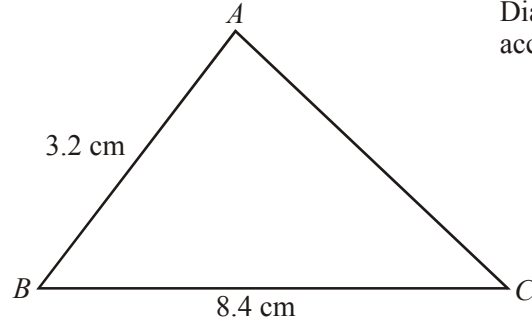


Diagram **NOT** accurately drawn

$$AB = 3.2 \text{ cm}$$
$$BC = 8.4 \text{ cm}$$

The area of triangle ABC is 10 cm^2 .

Calculate the perimeter of triangle ABC .
Give your answer correct to three significant figures.

..... cm
(Total 6 marks)