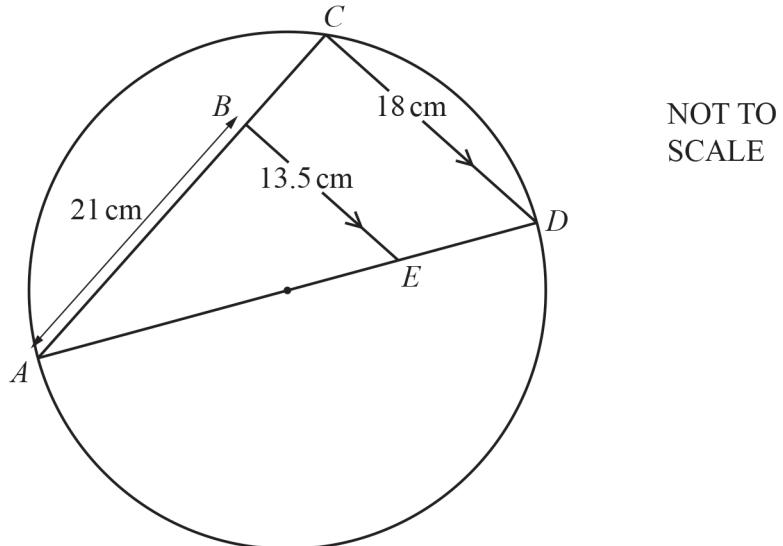


1



C lies on a circle with diameter AD .

B lies on AC and E lies on AD such that BE is parallel to CD .

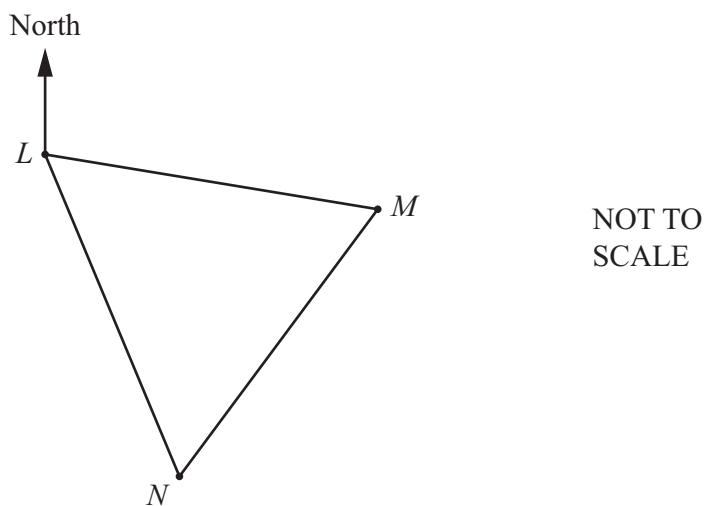
$AB = 21 \text{ cm}$, $CD = 18 \text{ cm}$ and $BE = 13.5 \text{ cm}$.

Work out the radius of the circle.

..... cm [5]

[Total: 5]

2



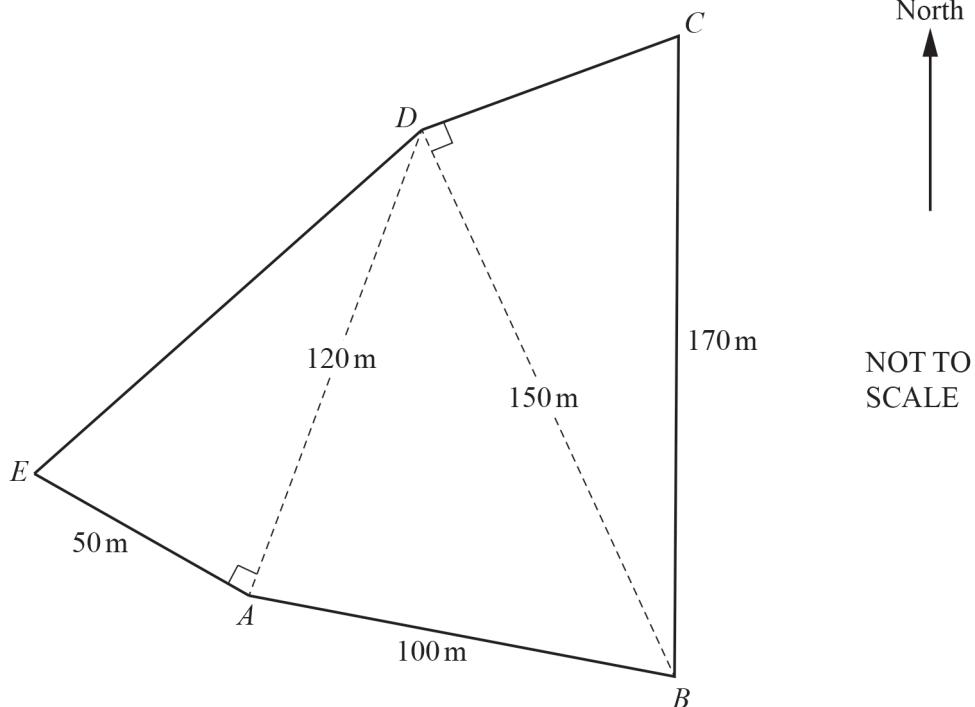
On a map, the positions of the towns L , M and N form an equilateral triangle.
The bearing of M from L is 103° .

Work out the bearing of L from N .

..... [2]

[Total: 2]

3



The diagram shows a field $ABCDE$.

(a) Calculate the perimeter of the field $ABCDE$.

..... m [4]

(b) Calculate angle ABD .

Angle ABD = [4]

(c) (i) Calculate angle CBD .

Angle CBD = [2]

(ii) The point C is due north of the point B .

Find the bearing of D from B .

..... [2]

(d) Calculate the area of the field $ABCDE$.

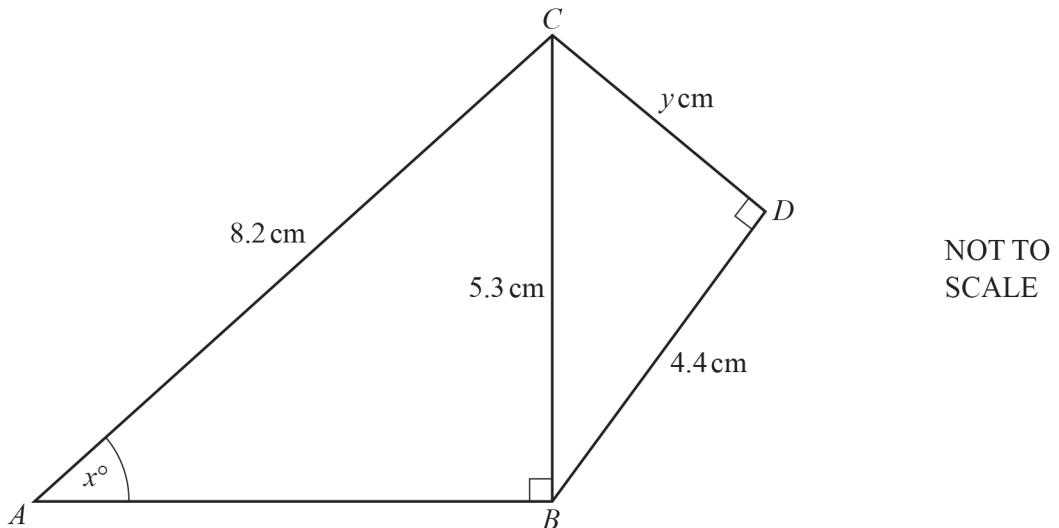
Give your answer in hectares.

[1 hectare = $10\,000\text{ m}^2$]

..... hectares [4]

[Total: 16]

4



Triangles ABC and BCD are both right-angled triangles.

(a) Calculate the value of y .

$$y = \dots \quad [3]$$

(b) Calculate the value of x .

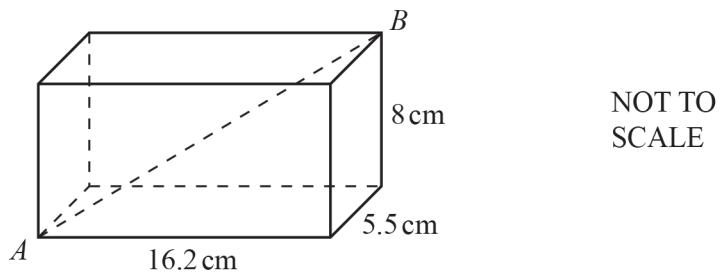
$$x = \dots \quad [2]$$

[Total: 5]

5 Solve $4 \sin x - 1 = 2$ for $0^\circ \leq x \leq 360^\circ$.

$$x = \dots \text{ and } x = \dots \quad [3]$$

[Total: 3]



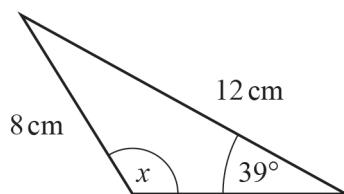
The diagram shows a cuboid with dimensions 5.5 cm, 8 cm and 16.2 cm.

Calculate the angle between the line AB and the horizontal base of the cuboid.

..... [4]

[Total: 4]

7

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Calculate the **obtuse** angle x in this triangle.

$$x = \dots \quad [3]$$

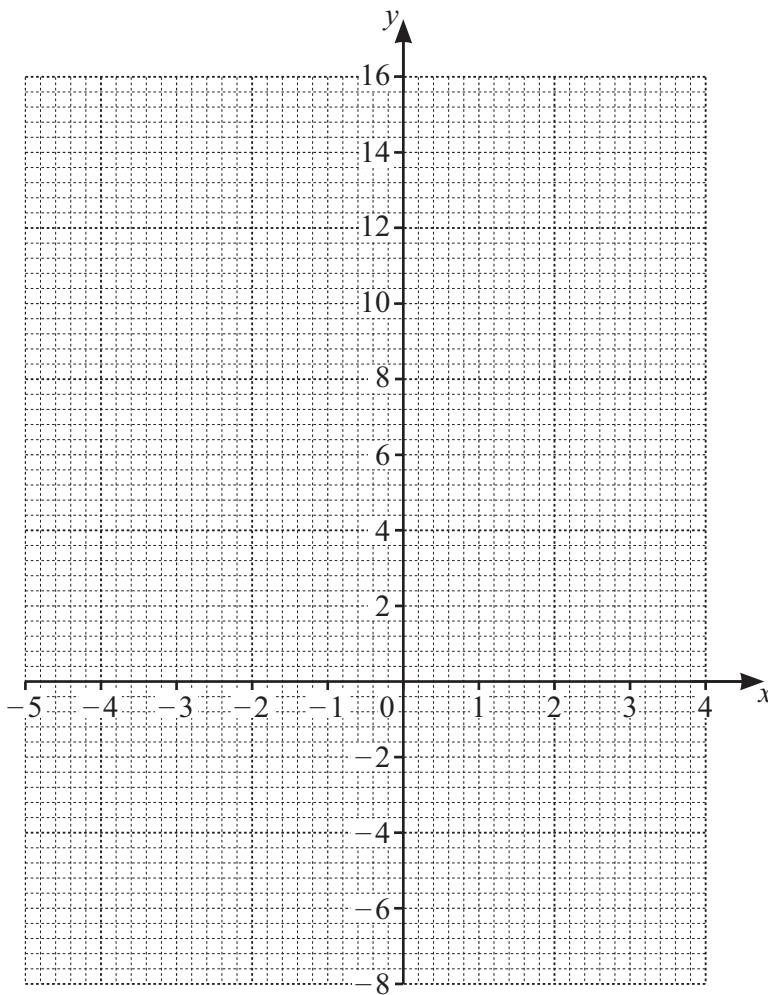
[Total: 3]

8 (a) Complete the table of values for $y = -x^2 - x + 14$.

x	-5	-4	-3	-2	-1	0	1	2	3	4
y			8	12			12	8		

[3]

8 (b) On the grid, draw the graph of $y = -x^2 - x + 14$ for $-5 \leq x \leq 4$.



[4]

(c) (i) Write down the equation of the line of symmetry of the graph.

..... [1]

(ii) Find the coordinates of the highest point on the graph.

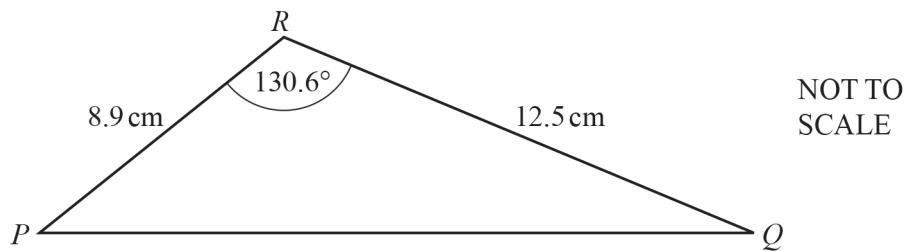
(..... ,) [1]

(d) Use your graph to solve the equation $-x^2 - x + 14 = -2$.

 $x = \dots$ or $x = \dots$ [2]

[Total: 11]

9



Calculate the area of triangle PQR .

..... cm^2 [2]

[Total: 2]