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## National 5 Maths

# Area of a Triangle

SQA past paper and specimen paper  
questions and answers by topic

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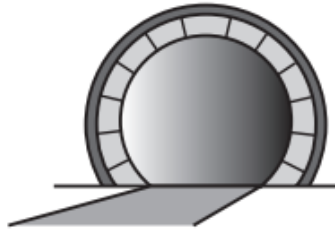
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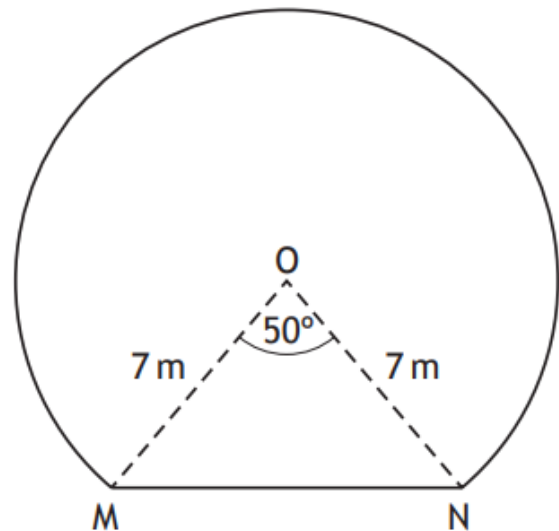


The picture shows the entrance to a tunnel which is in the shape of part of a circle.



The diagram below represents the cross-section of the tunnel.

- The centre of the circle is  $O$ .
- $MN$  is a chord of the circle.
- Angle  $MON$  is  $50^\circ$ .
- The radius of the circle is 7 metres.



Calculate the area of the cross-section of the tunnel.

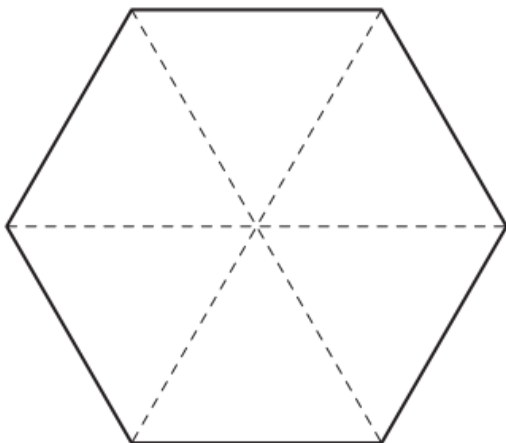
5

Answer:

151.3 m<sup>2</sup>

The top of a table is in the shape of a regular hexagon.

The three diagonals of the hexagon which are shown as dotted lines in the diagram below each have length 40 centimetres.



Calculate the area of the top of the table.

4

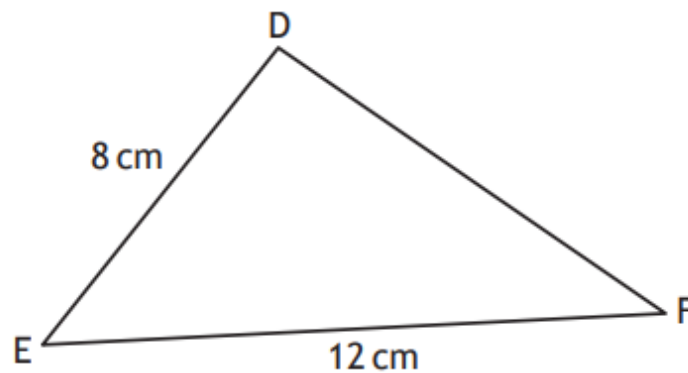
Answer:

1039.2 cm<sup>2</sup>



In triangle DEF:

- $DE = 8$  centimetres
- $EF = 12$  centimetres
- $\sin E = \frac{2}{3}$



Calculate the area of triangle DEF.

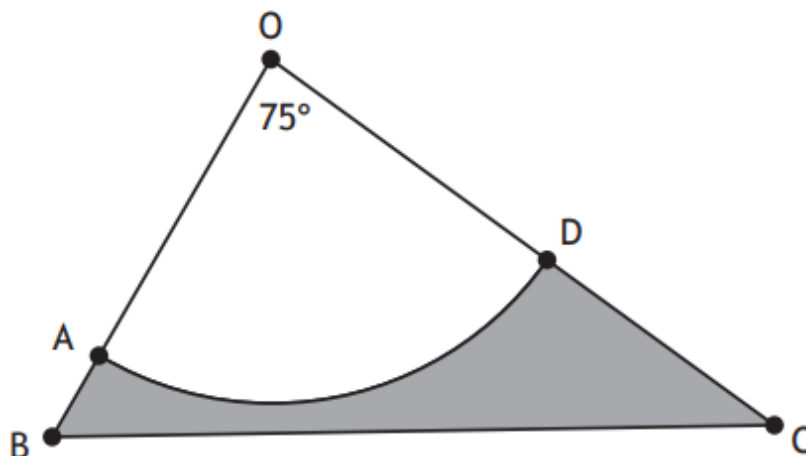
2

Answer:

$32 \text{ cm}^2$



In the diagram below AOD is a sector of a circle, with centre O, and BOC is a triangle.



In sector AOD:

- radius = 30 centimetres
- angle AOD =  $75^\circ$ .

In triangle OBC:

- OB = 38 centimetres
- OC = 55 centimetres.

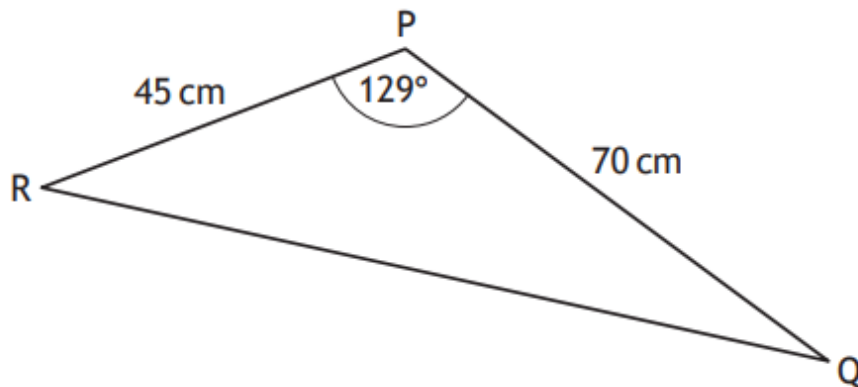
Calculate the area of the shaded region, ABCD.

5

Answer:

420.3 cm<sup>2</sup>

The diagram shows triangle PQR.



- $PR = 45$  centimetres
- $PQ = 70$  centimetres
- Angle  $QPR = 129^\circ$

Calculate the area of triangle PQR.

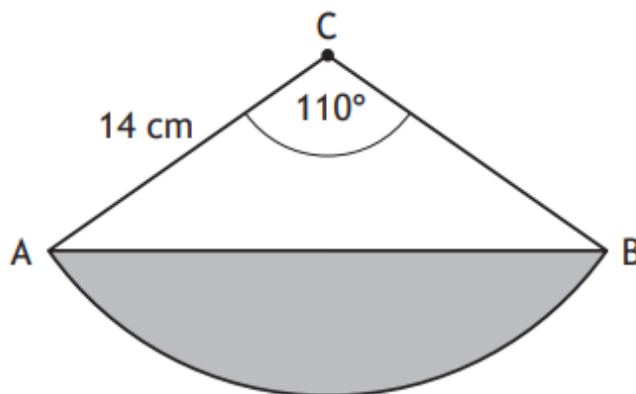
2

Answer:

1224.0 cm<sup>2</sup>

The diagram shows a sector of a circle, with centre C and radius 14 centimetres.

Angle ACB is  $110^\circ$ .



AB splits the sector into the shaded segment and triangle ABC.

Find the area of the shaded segment.

5

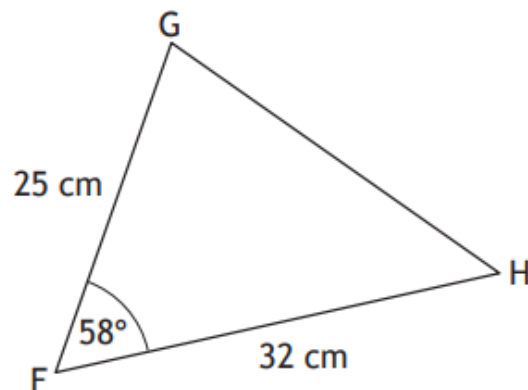
Answer:

$96.1 \text{ cm}^2$

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SQA 2022 Paper 2  
Question 6

The diagram shows triangle FGH.

- $FG = 25$  centimetres
- $FH = 32$  centimetres
- Angle  $GFH = 58^\circ$



Calculate the area of triangle FGH.

2

Answer:

$339.2 \text{ cm}^2$



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SQA 2023 Paper 2  
Question 15

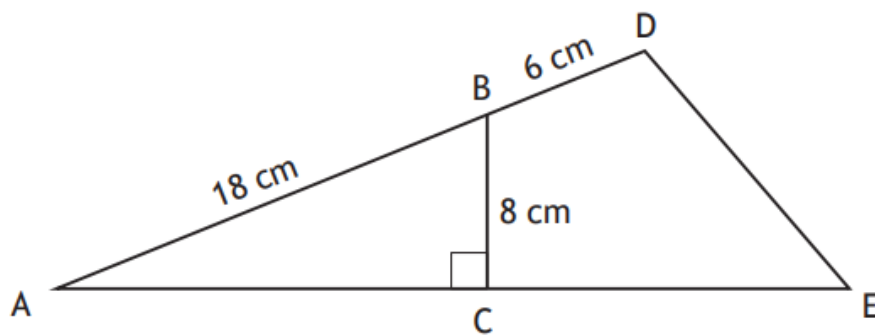
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In the diagram:

- $AC$  is perpendicular to  $BC$
- $AB = 18$  centimetres
- $BD = 6$  centimetres
- $BC = 8$  centimetres.



The area of triangle ADE is 160 square centimetres.

Calculate the length of AE.

4

Answer:

30 cm