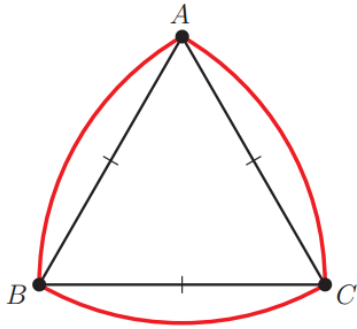


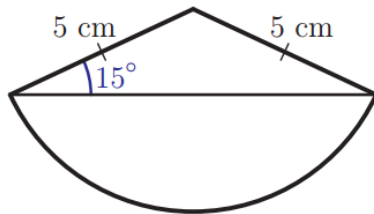
8. The figure below shows an equilateral triangle  $ABC$  with side  $a = 5$  cm, and three arcs of circles with centres at the vertices of the triangle. Calculate the perimeter of the figure.

[5 marks]



10. Find the exact perimeter of the figure shown:

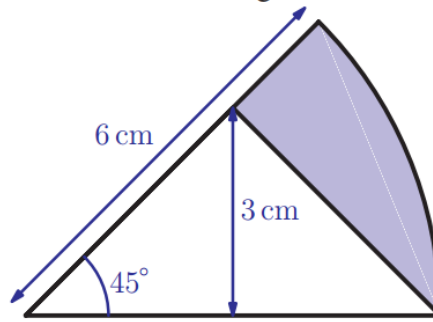
[6 marks]



9. A sector of a circle has perimeter 7 cm and area  $3 \text{ cm}^2$ . Find the possible values of the radius of the circle. [6 marks]

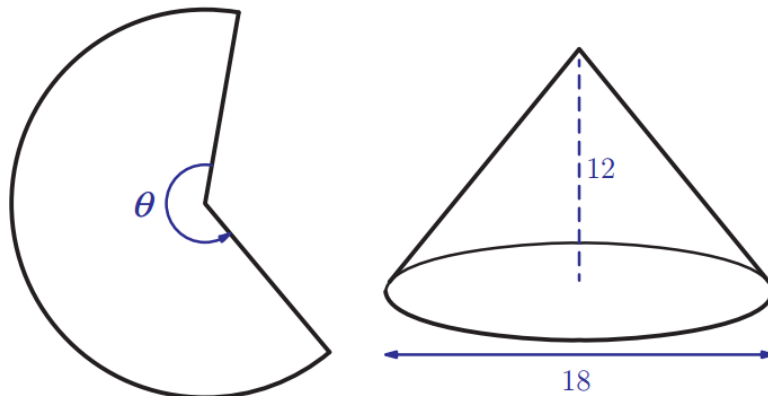
10. Points  $P$  and  $Q$  lie on the circumference of the circle with centre  $O$  and radius 5 cm. The difference between the areas of the major sector  $POQ$  and the minor sector  $POQ$  is  $15 \text{ cm}^2$ . Find the size of the angle  $POQ$ . [5 marks]

7. Find the area of the shaded region:



[6 marks]

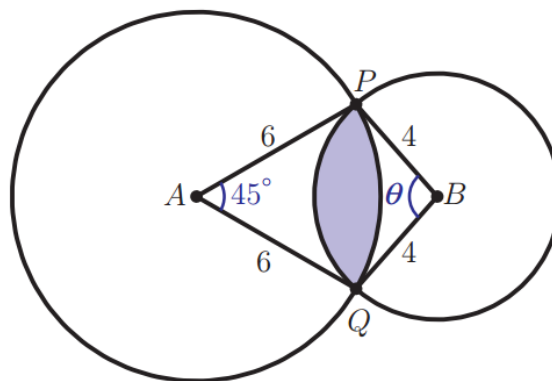
12. A cone is made by rolling a piece of paper as shown in the diagram.



If the cone is to have height 12 cm and base diameter 18 cm, find the size of the angle marked  $\theta$ .

[6 marks]

5. Two circles, with centres  $A$  and  $B$ , intersect at  $P$  and  $Q$ . The radii of the circles are 6 cm and 4 cm, and  $\hat{P}A Q = 45^\circ$ .



- Show that  $PQ = 6\sqrt{2} - \sqrt{2}$ .
- Find the size of  $\hat{P}BQ$ .
- Find the area of the shaded region.

[9 marks]