Sector and triangle (paper 2)

1. The following diagram shows the triangle ABC.

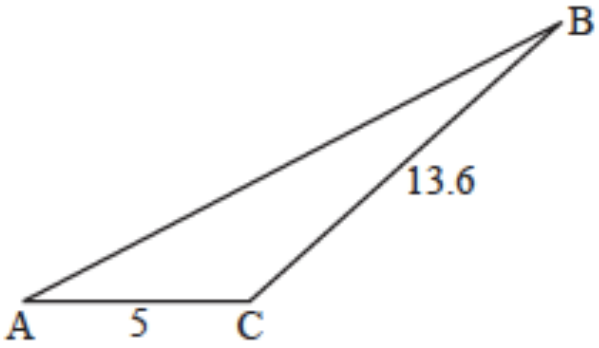

diagram not to scale

The angle at C is obtuse, AC = 5 cm, BC = 13.6 cm and the area is $20\ \text{cm}^2$.

(a) Find the angle ACB.
(b) Find AB.

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2. The diagram below shows a circle with centre O and radius 8 cm.

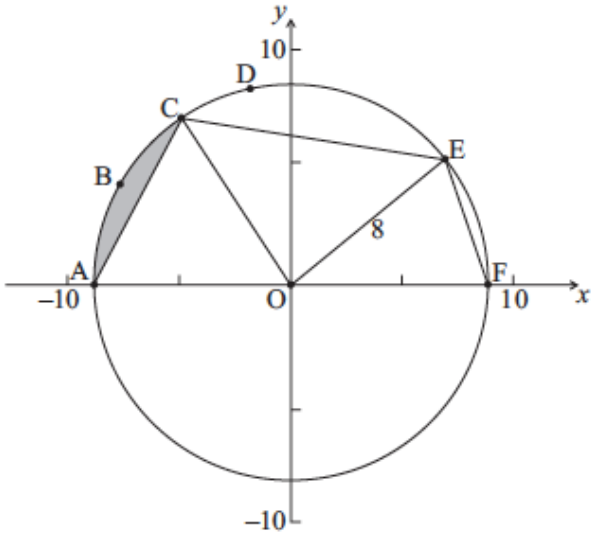

diagram not to scale

The points A, B, C, D, E and F are on the circle, and [AF] is a diameter. The length of arc ABC is 6 cm.

(a) Find the size of angle AOC.
(b) Hence find the area of shaded region.

The area of sector OCDE is 45 cm^2.
(c) Find the size of angle COE.
(d) Find EF.

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3. Consider the triangle ABC, where AB = 10, BC = 7 and angle CAB = 30°.

(a) Find the two possible values of angle ACB.

(b) Hence, find angle ABC, given that it is acute.

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4. Consider the following circle with centre O and radius 6.8 cm.

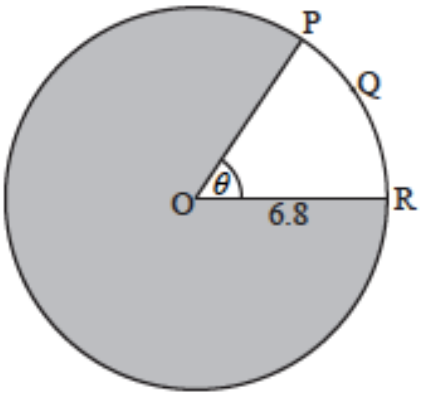

diagram not to scale

The length of the arc PQR is 8.5 cm.

(a) Find the value of θ.

(b) Find the area of the shaded region.

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