



In the diagram, ABC is a semicircle, centre O and radius 9 cm . The line BD is perpendicular to the diameter AC and angle $AOB = 2.4$ radians.

- (i) Show that $BD = 6.08\text{ cm}$, correct to 3 significant figures. [2]
- (ii) Find the perimeter of the shaded region. [3]
- (iii) Find the area of the shaded region. [3]