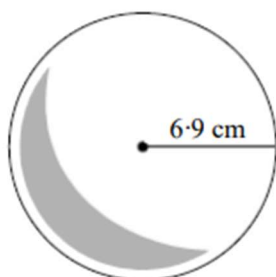


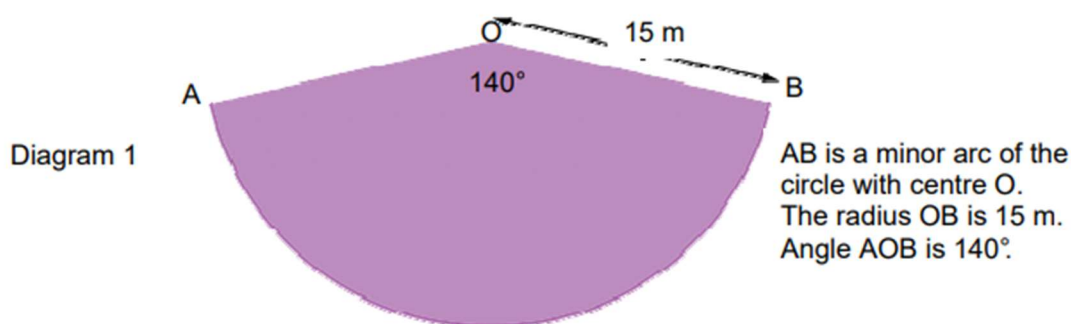
Outcome 1.4, 2.1 and 2.4 Formulae for perimeter, area and volume

- 8 Points P and Q have coordinates $(-2, 1)$ and $(8, -4)$ respectively.
Calculate the gradient of PQ. 2 marks
- 9 Calculate the volume of a sphere with radius 6.9 cm,
giving your answer correct to two significant figures.

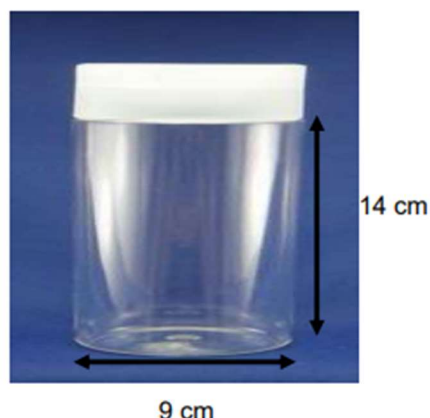
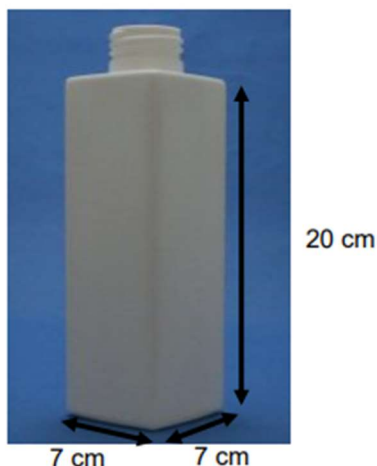


3 marks

- 10 A sensor in a security system covers a horizontal area in the shape of a sector of a circle of radius 15 m.



- (a) If 12 sensors are fitted what is the maximum area that can be covered? 2 marks
- (b) The manufacturers claim that the product is effective if 80% of the ground is covered by sensors. Would 12 sensors be effective for an area of 4000 m^2 ? # 2.1
2.2
- 11 A bottle with a square base of length 7 cm and a height of 20 cm is full of liquid.



The liquid is poured into a cylindrical beaker of diameter 9 cm and height 14 cm.

Will the beaker hold the liquid or will it overflow?

2 marks # 2.1
2.2