

15th May



Corbettmaths

The diagram shows the circle $x^2 + y^2 = 17$

P lies on the circle and has x-coordinate 1.

$(1, 4)$

The tangent at P intersects the x-axis at R.

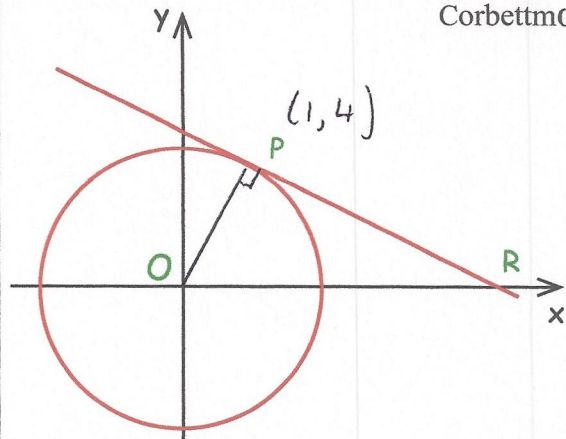
Work out the coordinates of R

gradient of OP is 4
of PR = $-\frac{1}{4}$

$$y = -\frac{1}{4}x + c$$

$$4 = -\frac{1}{4} + c$$

$$c = 4.25$$

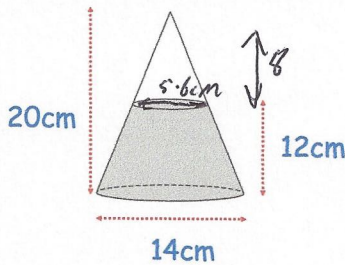


$$y = -0.25x + 4.25$$

$$0 = -0.25x + 4.25$$

$$0.25x = 4.25$$

$$x = 17 \quad (17, 0)$$



$$\frac{12}{20} = \frac{3}{5}$$

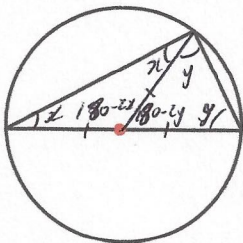
$$\frac{3}{5} \text{ of } 14 = 5.6$$

$$\frac{1}{3} \times \pi \times 7^2 \times 20 = 1026.2536$$

Find the volume of liquid in the container

$$\frac{1}{3} \times \pi \times 2.8^2 \times 8 = 65.68023041$$

$$960.5733696 \text{ cm}^3$$



Angles on straight line add to 180°

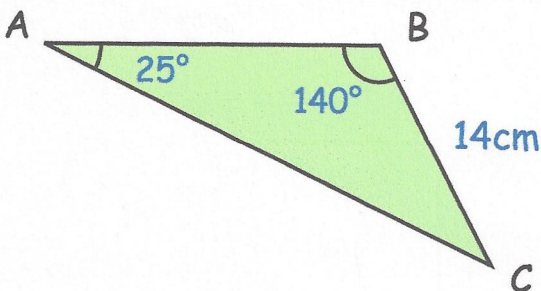
$$(180 - 2x) + (180 - 2y) = 180$$

$$360 - 2x - 2y = 180$$

$$2x + 2y = 180$$

Prove that the angle in a semi-circle is always 90°

$$x + y = 90^\circ$$



All values are correct to 2 significant figures.

Calculate the upper bound of AC.

$$24.7244 \text{ cm}$$