31st July **Higher Plus 5-a-day**

Corbettmaths

A cylinder has a height of 18cm and volume of 1715cm³.
Work out the surface area of the cylinder.

Area of circle $= \frac{1715}{18}$

$= 95.27\dot{}$

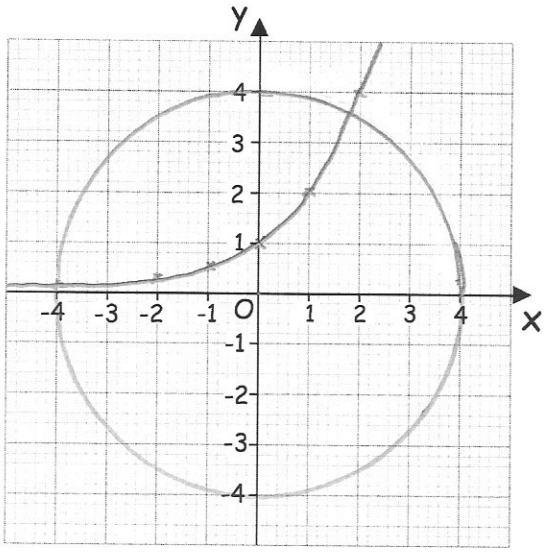
$r = 5.507073506\text{ cm}$

$\pi \times d \times h = 622.83534\ldots \text{ cm}^2$

$622.835\ldots + 95.27\dot{} + 95.27\dot{}$

$= 813.39\text{ cm}^2$

Draw $x^2 + y^2 = 16$



By sketching $y = 2^x$, show that the graphs of $x^2 + y^2 = 16$ and $y = 2^x$ have two points of intersection.

Solve

$$\frac{x+1}{x-3} + \frac{2}{x-4} = 2$$

Give your solutions to 3 significant figures

$$\frac{(x+1)(x-4) + 2(x-3)}{(x-3)(x-4)} = 2$$

$$\frac{x^2 - 3x - 4 + 2x - 6}{x^2 - 7x + 12} = 2$$

$$x^2 - x - 10 = 2x^2 - 14x + 24$$

$$0 = x^2 - 13x + 34$$

$a = 1 \quad b = -13 \quad c = 34$

$$x = \frac{13 \pm \sqrt{23}}{2}$$

$x = 9.37$ or $x = 3.63$