

21st September



Corbettmaths

The function f is such that
 $f(x) = 4x - 7$

solve $f(x) = 17$

$$4x - 7 = 17$$

$$4x = 24$$

$$x = 6$$

Find $f^{-1}(x)$

$$y = 4x - 7$$

$$y - 7 = 4x$$

$$\frac{y - 7}{4} = x$$

$$f^{-1}(y) = \frac{y - 7}{4}$$

Work out $27^{-\frac{2}{3}}$

$$27^{\frac{2}{3}} = 9$$

$$\frac{1}{9}$$

a is directly proportional to \sqrt{c} .
 w is inversely proportional to a^3 .

When $c = 49$, $a = 35$
 When $a = 2$, $w = 16$.

Find the value of w when $c = 4$.

$$a \propto \sqrt{c} \quad w \propto \frac{1}{a^3} \quad \text{when } c = 4$$

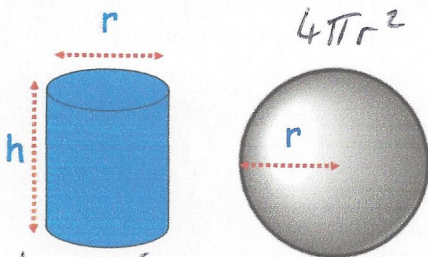
$$a = k\sqrt{c} \quad w = \frac{k}{a^3} \quad a = 5 \times \sqrt{4}$$

$$35 = k \times \sqrt{49} \quad a = 10$$

$$k = 5 \quad w = \frac{k}{2^3} \quad w = \frac{128}{10^3}$$

$$\boxed{a = 5\sqrt{c}} \quad k = 128 \quad w = 0.128$$

$$\boxed{w = \frac{128}{a^3}}$$



$$\pi r h + \pi \left(\frac{1}{2}r\right)^2 + \pi \left(\frac{1}{2}r\right)^2$$

The surface area of the cylinder is equal to the surface area of the sphere.

Express h in terms of r

$$\pi r h + \frac{1}{2}\pi r^2 = 4\pi r^2$$

$$h + \frac{1}{2}r = 4r$$

$$h = 3\frac{1}{2}r$$

$$\pi r h + \frac{1}{4}\pi r^2 + \frac{1}{4}\pi r^2$$

$$\pi r h + \frac{1}{2}\pi r^2$$