

27th February



Corbettm0ths

Simplify fully

$$\frac{3x}{x^2 + 3x + 2} + \frac{3}{x + 1}$$

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

~~3x/(x+1)(x+2)~~

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

$$\frac{6x+6}{(x+1)(x+2)} = \frac{6}{x+2}$$

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 $c = 4$.

$$a \propto \sqrt{c}$$

$$a = k\sqrt{c}$$

$$35 = k\sqrt{49}$$

$$k = 5$$

$$a = 5\sqrt{c}$$

$$c = 4 \rightarrow a = 10$$

$$w \propto \frac{1}{a^3}$$

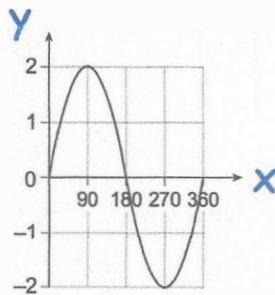
$$w = \frac{k}{a^3}$$

$$16 = \frac{k}{8}$$

$$k = 128$$

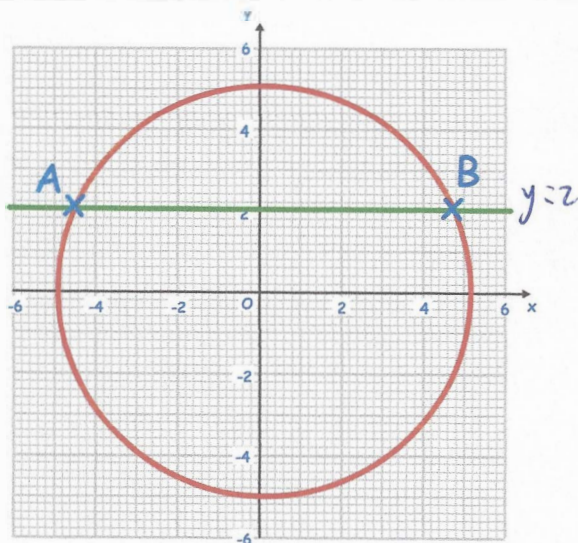
$$w = \frac{128}{a^3}$$

$$w = \frac{128}{10^3} = \frac{128}{1000} = 0.128$$



Write down the equation of the curve shown.

$$y = 2 \sin x$$



A circle has equation $x^2 + y^2 = 25$
A straight line meets the circle at the points A and B.

$$x^2 + 2^2 = 25$$

$$x^2 + 4 = 25$$

Find the coordinates of the points A and B. Give your answers in surd form.

$$x^2 = 21$$

$$x = \pm\sqrt{21}$$

$$(\sqrt{21}, 2) \text{ and}$$

$$(-\sqrt{21}, 2)$$