



The line l_1 has equation $2x + 3y + 5 = 0$
The line l_2 has equation $y = 8x - 10$

The line l_1 crosses the x -axis at the point

A. $2x = -5$
 $x = -2.5$ $(-2.5, 0)$

The line l_2 crosses the y -axis at the point

B. $(0, -10)$

Find the distance AB.

$$\sqrt{2.5^2 + 10^2}$$

$$= 10.3$$

x is directly proportional to w^2

When $w = 4$, $x = 48$

y is inversely proportional to x^3

When $x = 2$, $y = 14$

Find a formula for y in terms of w .

Give your answer in its simplest form.

$$x = kw^2 \quad y = \frac{k}{x^3}$$

$$48 = k \times 16 \quad 14 = \frac{k}{8} \quad y = \frac{112}{(3w^2)^3}$$

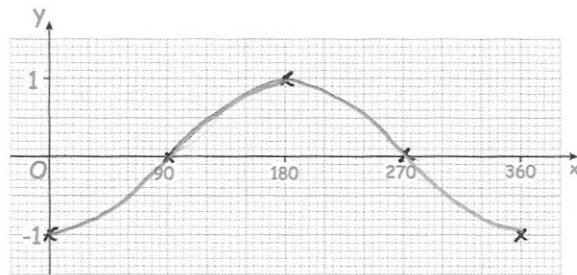
$$k = 3 \quad k = 112 \quad y = \frac{112}{27w^6}$$

$$x = 3w^2 \quad y = \frac{112}{x^3}$$

$f(x) = \sin x$

$g(x) = x - 90$

Draw $y = fg(x)$



The width of a rectangular field is x metres.

The length of the field is 30m longer than the width. $x + 30$

The perimeter of the field is less than 500m.

The area of the field is greater than 4000m^2 .

By writing suitable inequalities, find the possible values of x

$$50 < x < 110$$

$$4x + 60 < 500$$

$$4x < 440$$

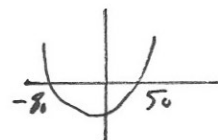
$$x < 110$$

$$x(x + 30) > 4000$$

$$x^2 + 30x - 4000 > 0$$

$$(x - 50)(x + 80) > 0$$

$$x = 50 \quad x = -80$$



$$x < -80 \text{ or } x > 50$$