



Make  $m$  the subject

$$\frac{3m+2}{c} = \frac{m+1}{a}$$

$$a(3m+2) = c(m+1)$$

$$3am + 2a = cm + c$$

$$3am - cm = c - 2a$$

$$m(3a - c) = c - 2a$$

$$m = \frac{c - 2a}{3a - c}$$

The time taken,  $t$ , for the passengers to be checked-in for a flight is inversely proportional to the square of the number of staff,  $s$ , working.

It takes 30 minutes for passengers to be checked-in when 10 staff are working.

$$t \propto \frac{1}{s^2}$$

Find an equation connecting  $t$  and  $s$ .

$$t = \frac{k}{s^2}$$

$$30 = \frac{k}{10^2}$$

$$k = 3000$$

$$t = \frac{3000}{s^2}$$

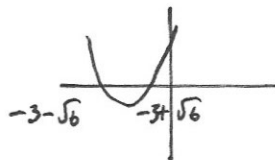
Solve  $x^2 + 6x + 3 = 0$  giving your answers in surd form.

$$(x+3)^2 - 9 + 3 = 0$$

$$(x+3)^2 - 6 = 0$$

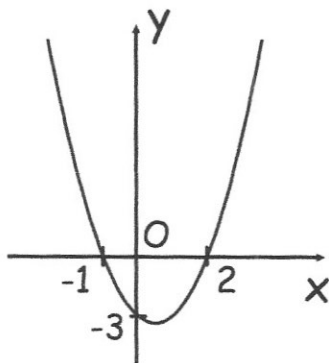
$$(x+3)^2 = 6 \quad x = -3 + \sqrt{6} \\ \text{or } x = -3 - \sqrt{6}$$

Solve the inequality  $x^2 + 6x + 3 < 0$

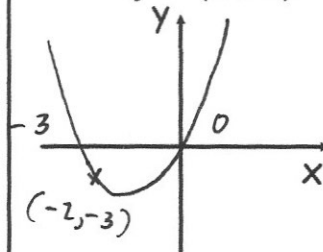


$$-3 - \sqrt{6} < x < -3 + \sqrt{6}$$

Here is a sketch of a curve with equation  $y = f(x)$



Sketch  $y = f(x+2)$



Sketch  $y = -f(x)$

