

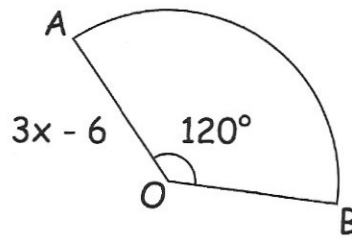


Write an expression for the area of sector AOB.

$$\frac{1}{3} \times \pi \times (3x-6)^2$$

$$\frac{1}{3} \times \pi \times (9x^2 - 36x + 36)$$

$$(3x^2 - 12x + 12)\pi$$



$$\frac{120}{360} = \frac{1}{3}$$

$f(x) = 2x - 1$

Draw  $y = f(x)$  and  $y = f^{-1}(x)$

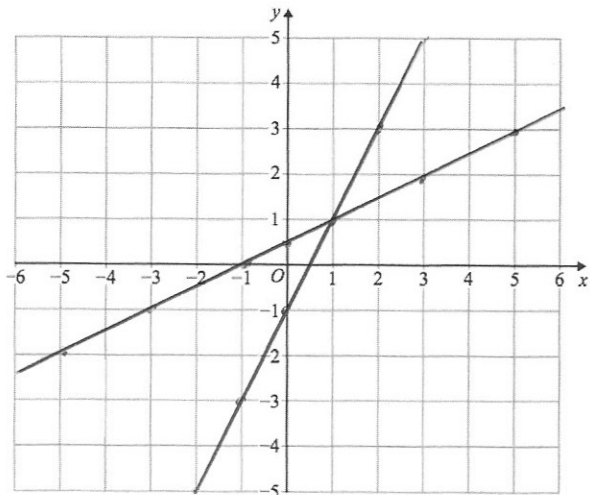
$$y = 2x - 1$$

$$y + 1 = 2x$$

$$x = \frac{y+1}{2}$$

$$f^{-1}(x) = \frac{x+1}{2}$$

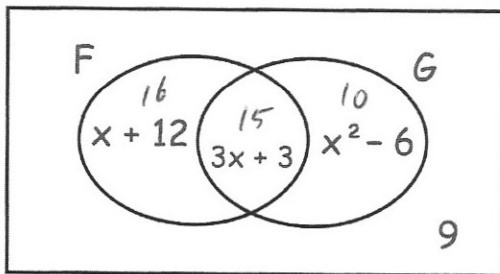
$$= \frac{1}{2}x + \frac{1}{2}$$



Solve  $f(x) = f^{-1}(x)$

$x = 1$

$\xi$



The Venn diagram shows information about the languages studied by 50 students.  $x^2 + 4x + 18 = 50$

$$x^2 + 4x - 32 = 0$$

$\xi = 50$  students

F = studies French  $(x+8)(x-4) = 0$

G = studies German  $x = 4$

Find how many students study both languages

15

A student is chosen at random.

They study German.

Work out the probability they also study French

$$\frac{15}{25} = \frac{3}{5}$$