Chapter 8: Functions.

Example 1:

The function f is defined as $f: \longrightarrow 3x-4$

(a) Find the following **(i)** f(2) **(ii)** f(-3) **(iii)** f(0) **(iv)** f(6)

$f(x)=3x-4$

NOTE:- f(2) means replace x in the function with a 2, f(-3) means replace x in the function with a -3 and so on.

$f(2)=3(2)-4=2$

$f(-3)=3(-3)-4=-13$

$f(0)=3(0)-4=-4$

$f(6)=3(6)-4=14$

(b) Find the value of x for which f(x) = 17

So, let $3x-4=17$

$3x-4=17$

$3x=17+4$

$3x=21$

$x=\frac{21}{3}=7$

(c) Find the number k for which f(6) = kf(2)

f(6) = 14 and f(2) = 2

So.... f(6) = kf(2)

14 = k(2)

14 = 2k

$k = \frac{14}{2}$

k = 7

Example 2:

$f(x)=x^2+5$ and $g(x)=-6x$ are 2 functions

Find the value of x for which $f(x)=g(x)$

Functions with Missing Coefficients.

Firstly, the **input** is the value put in for x (also called domain) and the **output** is the answer, (the value of y; also called range).

Example 1:

Let $f(x) = 2x + b$. If $f(3) = 11$, find the value of k.

So... we are replacing x with a 3 and let the equation equal to 11. Then solve.

$$2(3) + b = 11$$
$$6 + b = 11 \quad \text{(move the 6 across to the other side)}$$
$$b = 11 - 6$$
$$b = 5$$

Example 2:

$f :\to ax + by - 4$ is a function.

(i) If $f(2) = 10$ and $f(-3) = -25$, write out two equations in a and b

(ii) Hence, calculate the value of a and b.