

Question 4

Let $f(x) = 3x+5$, for x is an element of the set of Real Numbers.

a) Find the value of $f(7)$

This is straight forward substitution. We know the value of x is now 7 so we substitute in 7 in for x and simplify.

$$\begin{aligned}f(7) &= 3(7)+5 \\ &= 21+5 \\ &= 26\end{aligned}$$

b) Write $f(k)$ in terms of k .

This is also a straight forward substitution but we can be muddled by the k . We know the value of x is now k so we substitute in k for x and simplify.

$$\begin{aligned}f(k) &= 3(k)+5 \\ &= 3k+5\end{aligned}$$

c) Using your answer to part (b), or otherwise, find the value of k for which $f(k) = k$

This question is asking us to find a value of that the is equal to $f(k)$. Please remember that we love to hear that things are equal because that means that we can create an equation. In this case we are given the equation.

$$\begin{aligned}f(k) &= k \\ 3k+5 &= k\end{aligned}$$

$$\begin{aligned}3k+5 &= k \\3k-k+5 &= 0 \\2k+5 &= 0 \\2k &= -5 \\2k &= -5 \\k &= -2\frac{1}{2}\end{aligned}$$

Check:

We are not required to check but sometimes it can help our understanding of the question.

$$\begin{aligned}f(-2\frac{1}{2}) &= 3(-2\frac{1}{2})+5 \\&= -7\frac{1}{2}+5 \\&= -2\frac{1}{2}\end{aligned}$$