Use these two functions.

$$f(x) = 3x - 4 \qquad g(x) = \frac{x+4}{3}$$

1. Find f(g(x)). Simplify as much as possible.

$3\left(\frac{x+4}{3}\right) - 4 = x + 4 - 4 = x$

2. Find g(f(x)). Simplify as much as possible.

$\frac{(3x-4)+4}{3} = \frac{3x}{3} = x$

Whenever f(g(x))=x and g(f(x))=x

the functions f(x) and g(x) are called INVERSES

Are h(x) and k(x) inverses?

$h(x) = 5x^3 + 6$ $\qquad k(x) = \sqrt[3]{\frac{x}{5} - 6}$

$h(k(x)) = 5\left(\sqrt[3]{\frac{x}{5} - 6}\right)^3 + 6$

$5\left(\frac{x}{5} - 6\right) + 6$

$x - 30 + 6 = x - 24 \neq x$

This does not equal X so the two functions are NOT inverses.