

$$f(x) = 4 - 7x$$

$$g(x) = \frac{3x-2}{5}$$

$$h(x) = x^2 + 3$$

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

$$k(x) = 4x + 3$$

1. Find $f(g(4))$.

2. Find $k(h(x))$.

3. Find $h^{-1}(x)$.

4. Prove, using compositions, that $j(x)$ and $k(x)$ are inverses.