

QUIZ #2 COMPOSITE AND INVERSE FUNCTIONS

NAME: _____ CLASS: _____ DATE: _____

1. Given $f(x) = \frac{2x+1}{3}$
- Calculate the value of $f(7)$.
 - Find $f^{-1}(x)$.

2. The functions $f(x)$ and $g(x)$ are given by the following:

$$f(x) = 3x - 1$$
$$g(x) = 2x + 4$$

- Calculate the value of $fg(2)$.
- Calculate the value of $ff(3)$.
- Find $gf(x)$.

3. The functions $f(x)$, $g(x)$ and $h(x)$ are given by the following:

$$f(x) = x^2 - 3$$
$$g(x) = 2x + 1$$
$$h(x) = \frac{x}{2}$$

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

4. The function f is such that $f(x) = 4x - 7$.

- Solve $f(x) = 17$.
- Find $f^{-1}(x)$.

5. Given $f(x) = x^2 + 2$ and $g(x) = x + 14$.
Find the values of a such that $f(a) = g(a)$.

6. The functions $f(x)$ and $g(x)$ are given by the following:

$$f(x) = 8 - 3x$$

$$g(x) = 4x$$

(a) Calculate the value of $gf(3)$.

(b) Solve the equation $gf(x) = 80$.

7. Given that $f(x) = \frac{3x}{5} + 1$, find the inverse, $f^{-1}(x)$.

8. Given $f(x) = x^2 + 3x - 5$.

Express $f(2x - 1)$ in the form of $ax^2 + bx + c$.

9. The function f is such that $f(x) = kx + 3$.

The function g is such that $g(x) = 2x - 4$.

Given that $gf(2) = 34$, work out the value of k .

10. For all values of x ,

$$f(x) = x^2 + 4$$

$$g(x) = x - 9.$$

Solve $fg(x) = gf(x)$.

11. Given that $f(x) = x^2 + 2x + 1$, show that $f(x + 2) - f(x) = 4x + 8$.