

7.6A Function Composition

1. Find $f(g(2))$

$$2 \rightarrow g(x) = 3x + 4 \quad g(2) = \underline{\hspace{2cm}} \rightarrow f(x) = 2x - 12 \quad f(g(2)) = \underline{\hspace{2cm}}$$

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

$$4 \rightarrow g(x) = x^2 - 3x + 2 \quad g(4) = \underline{\hspace{2cm}} \rightarrow f(x) = 2x \quad f(g(4)) = \underline{\hspace{2cm}}$$

3. Find $f(g(2))$ if $f(x) = 2x - 2$ and $g(x) = x + 6$.

4. Find $g(f(2))$ if $f(x) = 2x - 2$ and $g(x) = x + 6$.

5. Find $f(g(6))$ if $f(x) = 4x - 25$ and $g(x) = x^2 - 6$.

6. Find $g(f(6))$ if $f(x) = 4x - 25$ and $g(x) = x^2 - 6$.

7. Find $(f - g)(x)$ given $f(x) = 3x + 5$ and $g(x) = x^2 - 5x$

8. Find $(g - f)(x)$ given $f(x) = 2n + 3$ and $g(x) = -2n + 2$

9. Find $(f + g)(x)$ given $f(x) = -2x - 3$ and $g(x) = 4x$

10. Find $(f + g)(x)$ given $f(x) = 4x - 4$ and $g(x) = -x^2 + 2x$

11. Find $(f + g)(x)$ given $f(x) = 12x$ and $g(x) = x^2 - 12x - 3$

12. Find $(g - f)(x)$ given $f(x) = -14x + 5$ and $g(x) = -7x$

13. Find $f(g(-1))$ if $f(x) = 4x^2 - 2x - 6$ and $g(x) = x + 8$.