

Section 2.6 WS 2

1. Let $f(x) = x^2 - 25$, and $g(x) = x - 5$.

a. $(f + g)(x)$

b. $(f - g)(x)$

c. $(fg)(x)$

d. $\left(\frac{f}{g}\right)(x)$

2. Let $f(x) = x^2 - 5x - 8$, and $g(x) = -x$.

a. $(f + g)(x)$

b. $(f - g)(x)$

c. $(fg)(x)$

d. $\left(\frac{f}{g}\right)(x)$

3. Let $f(x) = 6x + 10$, and $g(x) = 3x^2 + x - 10$.

a. $(f + g)(x)$

b. $(f - g)(x)$

c. $(fg)(x)$

d. $\left(\frac{f}{g}\right)(x)$

Evaluate the indicate function, where $f(x) = x^2 - 3x + 2$ and $g(x) = 2x - 4$.

4. $(f + g)(-7)$

5. $(f + g)\left(\frac{2}{3}\right)$

6. $(f - g)(24)$

7. $(f - g)(0)$

Evaluate the indicate function, where $f(x) = x^2 - 3x + 2$ and $g(x) = 2x - 4$.

8. $(fg)(-5)$

9. $\left(\frac{f}{g}\right)(6)$

10. $\left(\frac{f}{g}\right)(-3)$

11. $(fg)(-100)$

12. If $f(x) = 3x - 7$ and $g(x) = x + 10$, find the domain of $f + g$, $f - g$, fg , $\frac{f}{g}$.

13. If $f(x) = x^2 - 9$ and $g(x) = \sqrt{x - 2}$, find the domain of $f + g$, $f - g$, fg , $\frac{f}{g}$.

14. . If $f(x) = \sqrt{x + 13}$ and $g(x) = x^2 - 36$, find the domain of $f + g$, $f - g$, fg , $\frac{f}{g}$.

15. If $f(x) = 2x - 7$ and $g(x) = 3x + 2$, find $(f \circ g)(x)$ and $(g \circ f)(x)$ for the given functions.

16. If $f(x) = x^2 + 4x - 1$ and $g(x) = x + 2$, find $(f \circ g)(x)$ and $(g \circ f)(x)$ for the given functions.

17. If $f(x) = \sqrt{x+4}$ and $g(x) = \frac{1}{x}$, find $(f \circ g)(x)$ and $(g \circ f)(x)$ for the given functions.

Evaluate each composition function, where $f(x) = 2x + 3$, $g(x) = x^2 - 5x$, and $h(x) = 4 - 3x^2$.

18. $(f \circ g)(4)$ 19. $(g \circ f)(-1)$ 20. $(f \circ f)(-8)$ 21. $(g \circ h)\left(-\frac{1}{3}\right)$ 22. $(g \circ f)(\sqrt{3})$