

LESSON
6.3**Practice A**

For use with pages 428–435

1-23 odd, 25-30 all

Let $f(x) = x^{1/2} + 2$, $g(x) = 3x^{1/2} - 1$, and $h(x) = -2x^{1/2} + 3$. Perform the indicated operation.

- | | |
|------------------|------------------|
| 1. $f(x) + g(x)$ | 2. $f(x) + h(x)$ |
| 3. $h(x) + g(x)$ | 4. $f(x) - g(x)$ |
| 5. $h(x) - f(x)$ | 6. $g(x) - h(x)$ |

Let $f(x) = 4x^{3/2}$, $g(x) = 2x^{1/3}$, and $h(x) = -6x^{1/2}$. Perform the indicated operation.

- | | |
|-------------------------|-------------------------|
| 7. $f(x) \cdot g(x)$ | 8. $f(x) \cdot h(x)$ |
| 9. $h(x) \cdot g(x)$ | 10. $\frac{f(x)}{g(x)}$ |
| 11. $\frac{h(x)}{f(x)}$ | 12. $\frac{h(x)}{g(x)}$ |

Let $f(x) = 2x + 3$, $g(x) = x^2 - 1$, and $h(x) = \frac{x+1}{5}$. Find the indicated value.

- | | | |
|---------------|----------------|----------------|
| 13. $f(g(1))$ | 14. $h(g(4))$ | 15. $f(h(-6))$ |
| 16. $g(f(2))$ | 17. $h(f(-3))$ | 18. $g(g(2))$ |

Let $f(x) = 2x^{-1}$, $g(x) = 2x + 5$, and $h(x) = \frac{x-4}{2}$. Perform the indicated operation.

- | | |
|---------------|---------------|
| 19. $f(g(x))$ | 20. $g(h(x))$ |
| 21. $f(h(x))$ | 22. $g(f(x))$ |
| 23. $h(f(x))$ | 24. $g(g(x))$ |

Let $f(x) = 2x + 2$, $g(x) = x^2$, and $h(x) = \frac{3}{x-2}$. State the domain of the operation.

- | | |
|-----------------------|-------------------------|
| 25. $f(x) + g(x)$ | 26. $h(x) - f(x)$ |
| 27. $h(x) \cdot g(x)$ | 28. $\frac{g(x)}{f(x)}$ |
| 29. $h(g(x))$ | 30. $f(g(x))$ |

31. **Profit** A company estimates that its cost and revenue can be modeled by the functions $C(x) = 0.6x + 15,000$ and $R(x) = 1.25x$ where x is the number of units produced. The company's profit P is modeled by $P(x) = R(x) - C(x)$. Find the profit equation and determine the profit when 500,000 units are produced.

WORK
ON
SEPARATE
SHEET