

**Practice A**

For use with pages 415–420

Find  $f(x) + g(x)$ . Simplify your answer.

1.  $f(x) = 4x$ ,  $g(x) = 1 - x$

3.  $f(x) = x^2 + 3$ ,  $g(x) = x^2 - 2x - 1$

2.  $f(x) = 2x + 3$ ,  $g(x) = x^2 - 1$

Find  $f(x) - g(x)$ . Simplify your answer.

5.  $f(x) = 2x$ ,  $g(x) = x + 3$

7.  $f(x) = x + 1$ ,  $g(x) = -x^2 + 2x + 3$

6.  $f(x) = x^2 - x$ ,  $g(x) = x^2 - 2$

Find  $f(x) \cdot g(x)$ . Simplify your answer.

9.  $f(x) = 2x - 1$ ,  $g(x) = 3$

11.  $f(x) = x^2 + x - 1$ ,  $g(x) = 2x$

10.  $f(x) = x + 1$ ,  $g(x) = 3x - 2$

Find  $\frac{f(x)}{g(x)}$ . Simplify your answer.

13.  $f(x) = 3x$ ,  $g(x) = x + 2$

14.  $f(x) = x^2 + 1$ ,  $g(x) = x - 2$

Find  $f(g(x))$ . Simplify your answer.Let  $f(x) = x^2$  and  $g(x) = x - 3$ .

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

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

23.  $f(x) \cdot g(x)$

24.  $\frac{f(x)}{g(x)}$

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

30. **Profit** A company estimates that its cost and revenue can be modeled by the functions  $C(x) = 0.75x + 20,000$  and  $R(x) = 1.50x$  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 1,000,000 units are produced.

### Practice A

1.  $3x + 1$  2.  $x^2 + 2x + 2$  3.  $2x^2 - 2x + 2$   
4.  $7x^{1/2}$  5.  $x - 3$  6.  $-x + 2$  7.  $x^2 - x - 2$   
8.  $-x^{3/2}$  9.  $6x - 3$  10.  $3x^2 + x - 2$   
11.  $2x^3 + 2x^2 - 2x$  12.  $6x$  13.  $\frac{3x}{x + 2}$   
14.  $\frac{x^2 + 1}{x - 2}$  15.  $\frac{x - 2}{x^2 + x - 4}$  16.  $\frac{x^{1/6}}{2}$   
17.  $2x + 10$  18.  $\sqrt{4x + 9}$  19.  $x^2 - 2x + 3$   
20.  $x^{3/20}$  21. All real numbers 22. All real numbers  
23. All real numbers 24. All real numbers except  $x = 3$  25. All real numbers

### Answers

26. All real numbers 27. All real numbers  
28. All real numbers except  $x = 0$  29. All real numbers  
30.  $P(x) = 0.75x - 20,000$ ; \$730,000