

LESSON
7-2

Practice B
Inverses of Relations and Functions

Use inverse operations to write the inverse of each function.

1. $f(x) = 15x - 10$

2. $f(x) = 10 - 4x$

3. $f(x) = 12 - 9x$

4. $f(x) = 5x + 2$

5. $f(x) = x + 6$

6. $f(x) = x + \frac{1}{2}$

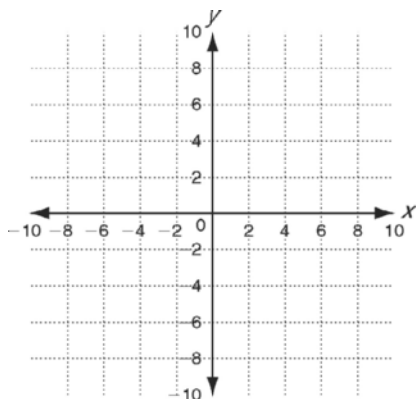
7. $f(x) = -\frac{x}{12}$

8. $f(x) = \frac{x-12}{4}$

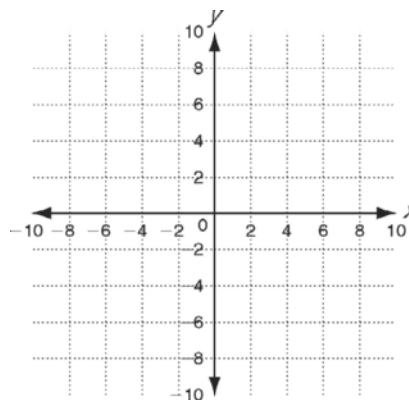
9. $f(x) = \frac{3x+1}{6}$

Graph each function. Then write and graph its inverse.

10. $f(x) = 2x - 4$



11. $f(x) = \frac{5}{2}x - 2$



Solve.

12. Dan works at a hardware store. The employee discount is determined by the formula $d = 0.15(c - 10)$. Use the inverse of this function to find the cost of the item for which Dan received an \$18.00 discount.

a. Find the inverse function that models cost as a function of the discount.

b. Evaluate the inverse function for $d = 18$.

c. What was Dan's final cost for this item?

b. Domain: $\{x \mid 0 \leq x \leq 6\}$; range:
 $\{y \mid 3 \leq y \leq 7\}$

d. Domain: $\{x \mid 3 \leq x \leq 7\}$; range:
 $\{y \mid 0 \leq y \leq 6\}$

2. a. Adding 9

b. Dividing by 2

c. $\frac{1}{2}(x+9)$

3. $f^{-1}(x) = -\frac{x}{4}$

4. $f^{-1}(x) = x - 6$

5. $f^{-1}(x) = \frac{x}{3} + 4$

6. $f^{-1}(x) = -\frac{x-6}{10}$

7. $f^{-1}(x) = \frac{x-1}{7}$

8. $f^{-1}(x) = \frac{x}{22}$

9. a. $c = x + 0.15x$, or $c = 1.15x$

b. $x = \frac{c}{1.15}$

c. $x = 8.60$

Practice B

1. $f^{-1}(x) = \frac{x+10}{15}$

2. $f^{-1}(x) = -\frac{x-10}{4}$

3. $f^{-1}(x) = -\frac{x-12}{9}$

4. $f^{-1}(x) = \frac{x-2}{5}$

5. $f^{-1}(x) = x - 6$

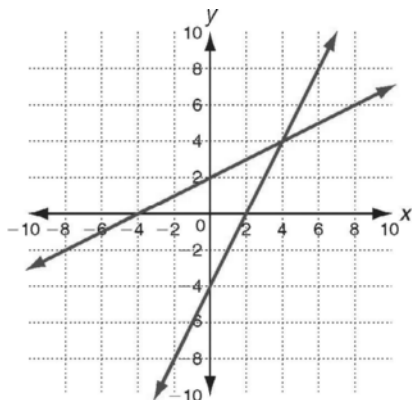
6. $f^{-1}(x) = x - \frac{1}{2}$

7. $f^{-1}(x) = -12x$

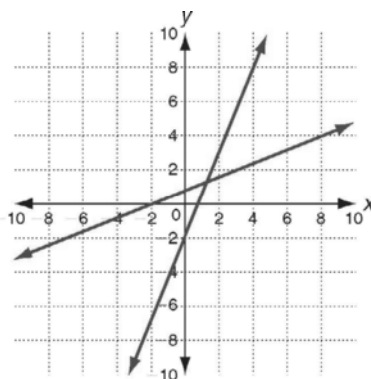
8. $f^{-1}(x) = 4x + 12$

9. $f^{-1}(x) = \frac{6x-1}{3}$, or $f^{-1}(x) = 2x - \frac{1}{3}$

10. $f^{-1}(x) = \frac{1}{2}x + 2$



11. $f^{-1}(x) = \frac{2}{5}(x+2)$



12. a. $c = \frac{d+1.5}{0.15}$

b. $c = 130$

c. \$112

Practice C

1. $f^{-1}(x) = 5x - 5$

2. $f^{-1}(x) = \pm\sqrt{x-9}$

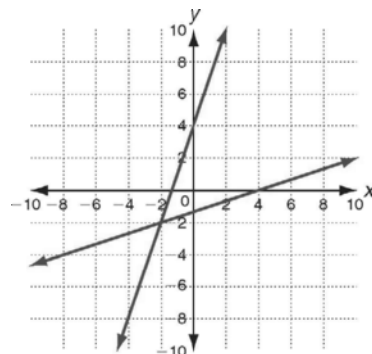
3. $f^{-1}(x) = -\frac{x-7}{4}$

4. $f^{-1}(x) = -8x - 2$

5. $f^{-1}(x) = \pm 4\sqrt{x}$

6. $f^{-1}(x) = \frac{6x+2}{5}$

7. $f^{-1}(x) = 3x + 4$



8. $f^{-1}(x) = \frac{x-3}{0.3}$

