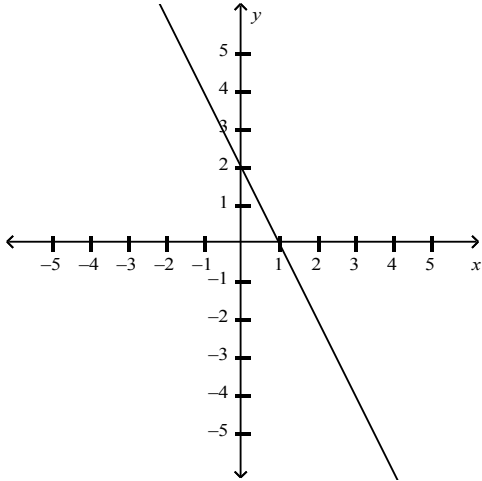
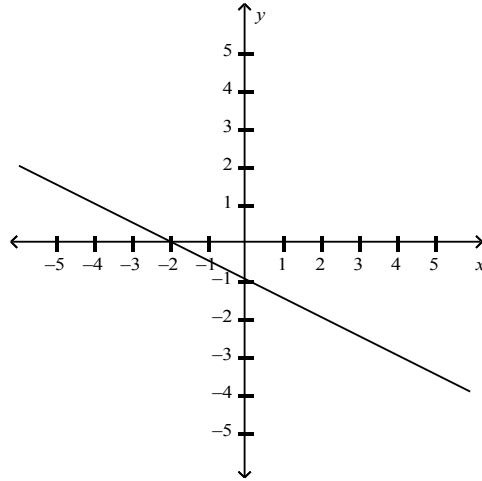


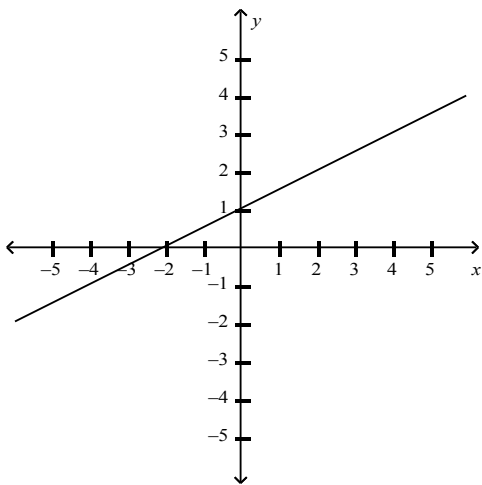
a.



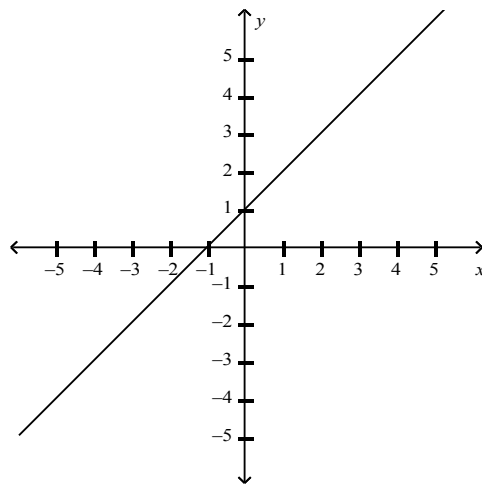
c.



b.



d.



- _____ 6. The Drama Club is holding a car wash to raise money. The club spent \$90 on materials and supplies. The club earns \$11.25 for each car they wash. Which of the following is the inverse to the function of how much the club earns per cars washed?

a. $f^{-1}(x) = -\frac{x}{11.25} + 8$

c. $f^{-1}(x) = -11.25x + 90$

b. $f^{-1}(x) = \frac{x}{11.25} + 8$

d. $f^{-1}(x) = \frac{1}{11.25x} - \frac{1}{90}$

- _____ 7. Which of the following is the inverse relation to the set of ordered pairs $\{(-7, 15), (0, -16), (5, 9), (17, -8)\}$?

a. $\{(7, -15), (0, 16), (-5, -9), (-17, 8)\}$

c. $\{(-15, 7), (16, 0), (-9, -5), (8, -17)\}$

b. $\{(-7, -15), (0, 16), (5, -9), (17, 8)\}$

d. $\{(15, -7), (-16, 0), (9, 5), (-8, 17)\}$

- _____ 8. Which of the following is the inverse to the function "Divide by 2, then add 21"?

a. Add 21, then divide by 2

c. Divide by 21, then add 2

b. Subtract 21, then multiply by 2

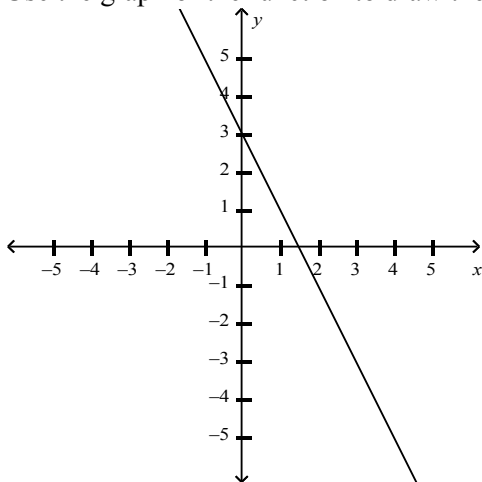
d. Multiply by 2, then subtract 21

Short Answer

9. What is the inverse of the linear function $f(x) = -10 + 8x$?

10. For $h(t) = -6t + 7$, determine $h^{-1}(4)$.

11. Use the graph of the function to draw the graph of the inverse.



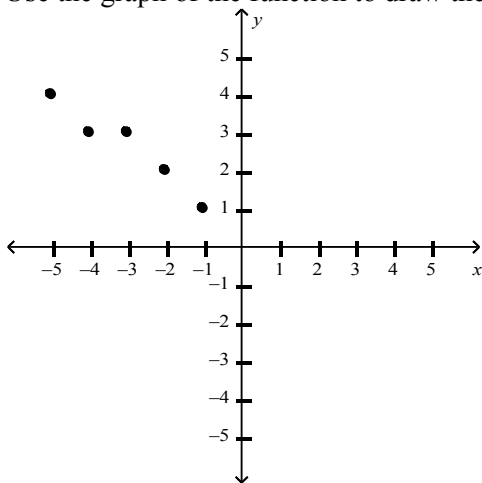
Is the inverse a function?

12. A DVD rental company charges \$7 per month plus \$2.50 for each rental. The relation can be defined by $c(x) = 2.5x + 7$. Determine the inverse of the function and what it represents.

13. What is the inverse of the linear function $f(x) = \frac{2}{3}x - 6$?

14. For $g(x) = 4 - 9x$, determine $g^{-1}(-3)$.

15. Use the graph of the function to draw the graph of the inverse.



Is the inverse a function?

16. Ms. Wright wrote the function $p(x) = 82x - 2700$ to represent her profits from purses sold. Determine the inverse of the function and what it represents.

17. What is the inverse of the linear function $h(x) = \frac{x + 7}{4}$?

18. For $k(x) = \frac{4}{5}x - 6$, determine $k^{-1}(8)$.

Problem

19. The formula for converting a temperature in degrees Fahrenheit into degrees Celsius is $C = \frac{5}{9}(F - 32)$.
- Write the formula in function notation.
 - Write f^{-1} as a rule. What does the rule represent?

c) Use the inverse function to convert 9 °C into degrees Fahrenheit.

Worksheet: Introduction to Inverse Functions
Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 REF: Application
OBJ: 1.5 - The Inverse Function and Its Properties
2. ANS: A PTS: 1 REF: Knowledge and Understanding
OBJ: 1.5 - The Inverse Function and Its Properties
3. ANS: A PTS: 1 REF: Application
OBJ: 1.5 - The Inverse Function and Its Properties
4. ANS: C PTS: 1 REF: Knowledge and Understanding
OBJ: 1.5 - The Inverse Function and Its Properties
5. ANS: B PTS: 1 REF: Application
OBJ: 1.5 - The Inverse Function and Its Properties
6. ANS: B PTS: 1 REF: Application
OBJ: 1.5 - The Inverse Function and Its Properties
7. ANS: D PTS: 1 REF: Knowledge and Understanding
OBJ: 1.5 - The Inverse Function and Its Properties
8. ANS: B PTS: 1 REF: Application
OBJ: 1.5 - The Inverse Function and Its Properties

SHORT ANSWER

9. ANS:

$$f(x) = \frac{x}{8} + \frac{5}{4}$$

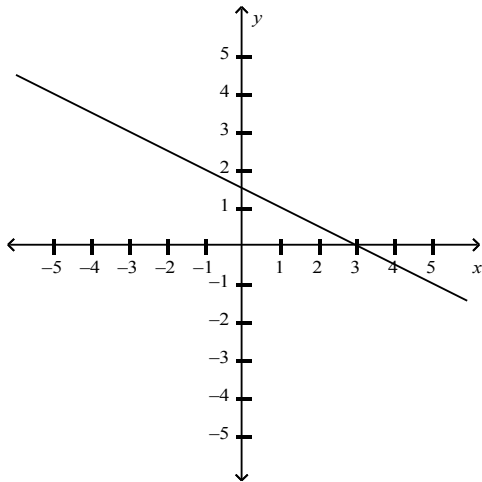
PTS: 1 REF: Knowledge and Understanding
OBJ: 1.5 - The Inverse Function and Its Properties

10. ANS:

$$h^{-1}(4) = \frac{1}{2}$$

PTS: 1 REF: Application OBJ: 1.5 - The Inverse Function and Its Properties

11. ANS:



Yes, the inverse is a function.

PTS: 1 REF: Thinking OBJ: 1.5 - The Inverse Function and Its Properties

12. ANS:

$$c^{-1}(x) = \frac{x}{2.5} - \frac{7}{2.5} \text{ or } c^{-1}(x) = 0.4x - 2.8$$

; the inverse represents the rentals as a function of cost

PTS: 1 REF: Thinking OBJ: 1.5 - The Inverse Function and Its Properties

13. ANS:

$$f^{-1}(x) = \frac{3}{2}x + 9$$

PTS: 1 REF: Knowledge and Understanding

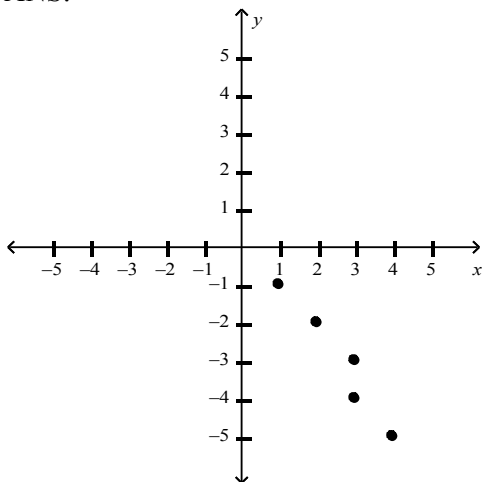
OBJ: 1.5 - The Inverse Function and Its Properties

14. ANS:

$$g^{-1}(-3) = \frac{7}{9}$$

PTS: 1 REF: Application OBJ: 1.5 - The Inverse Function and Its Properties

15. ANS:



No, the graph of the inverse is not a function.

PTS: 1 REF: Thinking OBJ: 1.5 - The Inverse Function and Its Properties

16. ANS:

$$p^{-1}(x) = \frac{x}{82} + \frac{1350}{41}; \text{ the inverse represents the purses sold as a function of profits}$$

PTS: 1 REF: Thinking OBJ: 1.5 - The Inverse Function and Its Properties

17. ANS:

$$h(x) = 4x - 7$$

PTS: 1 REF: Knowledge and Understanding

OBJ: 1.5 - The Inverse Function and Its Properties

18. ANS:

$$k^{-1}(8) = 17\frac{1}{2}$$

PTS: 1 REF: Application OBJ: 1.5 - The Inverse Function and Its Properties

PROBLEM

19. ANS:

a) $f(x) = \frac{5}{9}(x - 32)$

b) $f^{-1}(x) = \frac{9}{5}x + 32$; the inverse represents the formula to convert degrees Celsius to degrees Fahrenheit

c) 48.2 °F

PTS: 1 REF: Communication

OBJ: 1.5 - The Inverse Function and Its Properties