

Additional Exercises 10.6**Form I**

Introduction to Functions

Decide whether the relation defines a function.

1. $\{(-3, 3), (3, -9), (4, -4), (9, 3), (11, -7)\}$ 1. _____

2. $\{(-4, -7), (-1, 2), (3, -5), (3, 9)\}$ 2. _____

3. $\{(-4, -2), (-1, -8), (1, 5), (6, -6)\}$ 3. _____

4. $\{(-6, -9), (-6, -1), (2, 6), (3, -8), (8, 9)\}$ 4. _____

Find the domain and range.

5. $\{(-6, 6), (4, -9), (10, 5)\}$ 5. _____

6. $\{(1, -6), (-1, -7), (12, -5)\}$ 6. _____

7. $\{(3, -1), (-1, -6), (2, -3)\}$ 7. _____

8. $\{(-1, -2), (9, 4), (-3, 7)\}$ 8. _____

Evaluate the function at the given value.

9. Find $f(0)$ when $f(x) = 4x - 6$ 9. _____

10. Find $f(3)$ when $f(x) = x^2 - 5x + 4$ 10. _____

11. Find $h(9)$ when $h(x) = |x - 8|$ 11. _____

12. Find $f(3)$ when $f(x) = x^2 - 5x$ 12. _____

Name _____

Date _____

13. Find $f(4)$ when $f(t) = \sqrt{t+117} - 9$

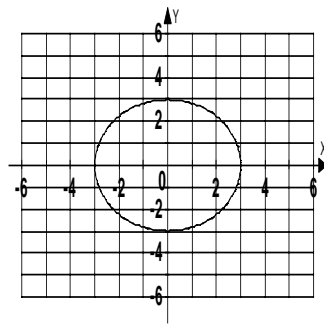
13. _____

14. Find $f(-5)$ when $f(r) = \frac{4r}{|4r|}$

14. _____

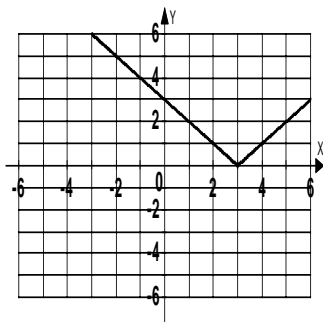
Use the vertical line test to determine if the graph is a function of x in y .

15.



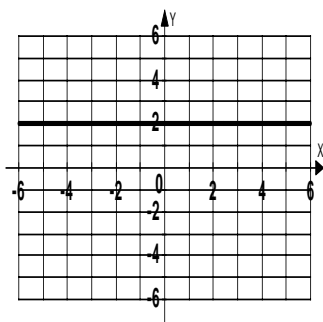
15. _____

16.



16. _____

17.



17. _____

Name _____

Date _____

Solve.

18. The monthly cost of a certain long distance service is given by the linear function $C(t) = 0.07t + 3.95$ where $C(t)$ is in dollars and t is the amount of time in minutes called in a month. Find the cost of calling long distance for 180 minutes in a month. 18. _____
19. A rocket is stopped 27 feet from a satellite when it begins accelerating away from the satellite at a constant rate of 8 feet per second. The distance between the rocket and the satellite is given by the polynomial $P(t) = 4t^2 + 27$. Find the distance between the rocket and the satellite 11 seconds after the rocket started moving. 19. _____
20. The function $W(g) = 0.54g^2 - 0.06g + 7.2$ models the average weight in ounces for a mouse who is fed g grams per day of a special food. Use the function to find and interpret $W(25)$. Round the answer to the nearest tenth. 20. _____

Additional Exercises 10.6**Form II**

Introduction to Functions

Decide whether the relation defines a function.

1. $\{(2, 1), (3, 7), (8, 5), (6, -8), (0, -5)\}$ 1. _____

2. $\{(1, 2), (1, 3), (1, 4), (1, 5)\}$ 2. _____

3. $\{(-3, 5), (6, 5), (2, 5), (1, 5)\}$ 3. _____

4. $\{(3, 4), (5, -1), (6, -7), (0, -2), (-6, 5)\}$ 4. _____

Find the domain and range.

5. $\{(1, 5), (0, 6), (-5, -4)\}$ 5. _____

6. $\{(-5, 3), (2, -8), (1, 0)\}$ 6. _____

7. $\{(1, 1), (2, 2), (3, 3)\}$ 7. _____

8. $\{(8, 5), (-6, 5), (0, 5)\}$ 8. _____

Evaluate the function at the given value.

9. Find $f(6)$ when $f(x) = 4x - 6$ 9. _____

10. Find $f(-1)$ when $f(x) = x^2 - 5x + 4$ 10. _____

11. Find $h(4)$ when $h(x) = |x - 8|$ 11. _____

12. Find $f(0)$ when $f(x) = x^2 - 5x$ 12. _____

Name _____

Date _____

13. Find $f(-17)$ when $f(t) = \sqrt{t+117} - 9$

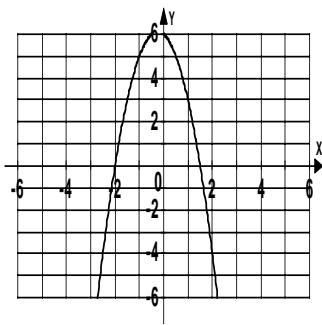
13. _____

14. Find $f(1)$ when $f(r) = \frac{4r}{|4r|}$

14. _____

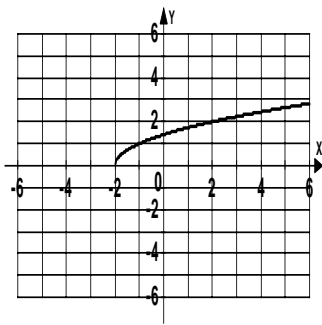
Use the vertical line test to determine if the graph is a function of x in y .

15.



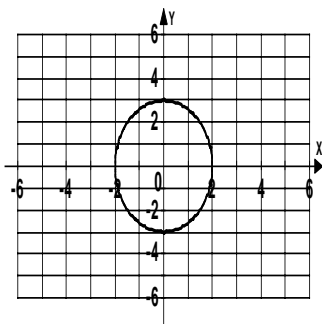
15. _____

16.



16. _____

17.



17. _____

Name _____

Date _____

Solve.

18. The monthly cost of a certain long distance service is given by the linear function $C(t) = 0.07t + 3.95$ where $C(t)$ is in dollars and t is the amount of time in minutes called in a month. Find the cost of calling long distance for 210 minutes in a month. 18. _____

19. A rocket is stopped 27 feet from a satellite when it begins accelerating away from the satellite at a constant rate of 8 feet per second. The distance between the rocket and the satellite is given by the polynomial $P(t) = 4t^2 + 27$. Find the distance between the rocket and the satellite 14 seconds after the rocket started moving. 19. _____

20. The function $W(g) = 0.54g^2 - 0.06g + 7.2$ models the average weight in ounces for a mouse who is fed g grams per day of a special food. Use the function to find and interpret $W(18)$. Round the answer to the nearest tenth. 20. _____

Additional Exercises 10.6**Form III**

Introduction to Functions

Decide whether the relation defines a function.

1. $\{(1, 4), (2, 0), (-3, 5), (5, 8), (6, -7)\}$ 1. _____

2. $\{(3, 3), (4, 4), (5, 5), (6, 6)\}$ 2. _____

3. $\{(-1, 8), (-1, 4), (-1, 6), (-1, -8)\}$ 3. _____

4. $\{(6, 4), (9, 4), (-8, 4), (-2, 4)\}$ 4. _____

Find the domain and range.

5. $\{(8, 1), (-3, 6), (5, 0)\}$ 5. _____

6. $\{(-4, 2), (7, -1), (8, -9)\}$ 6. _____

7. $\{(5, 5), (-2, -2), (6, 6)\}$ 7. _____

8. $\{(9, 3), (5, -4), (0, 1)\}$ 8. _____

Evaluate the function at the given value.

9. Find $f(-5)$ when $f(x) = 4x - 6$ 9. _____

10. Find $f(-4)$ when $f(x) = x^2 - 5x + 4$ 10. _____

11. Find $h(-2)$ when $h(x) = |x - 8|$ 11. _____

12. Find $f(-2)$ when $f(x) = x^2 - 5x$ 12. _____

Name _____

Date _____

13. Find $f(27)$ when $f(t) = \sqrt{t+117} - 9$

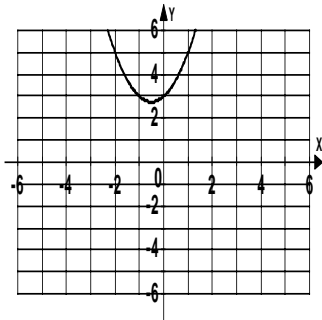
13. _____

14. Find $f(6)$ when $f(r) = \frac{4r}{|4r|}$

14. _____

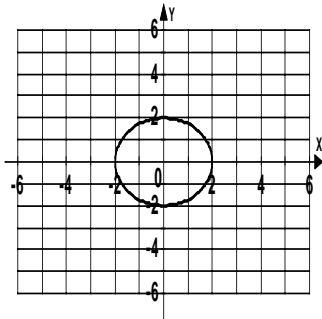
Use the vertical line test to determine if the graph is a function of x in y .

15.



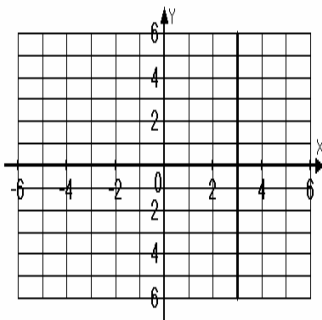
15. _____

16.



16. _____

17.



17. _____

Name _____

Date _____

Solve.

18. The monthly cost of a certain long distance service is given by the linear function $C(t) = 0.07t + 3.95$ where $C(t)$ is in dollars and t is the amount of time in minutes called in a month. Find the cost of calling long distance for 345 minutes in a month. 18. _____
19. A rocket is stopped 27 feet from a satellite when it begins accelerating away from the satellite at a constant rate of 8 feet per second. The distance between the rocket and the satellite is given by the polynomial $P(t) = 4t^2 + 27$. Find the distance between the rocket and the satellite 18 seconds after the rocket started moving. 19. _____
20. The function $W(g) = 0.54g^2 - 0.06g + 7.2$ models the average weight in ounces for a mouse who is fed g grams per day of a special food. Use the function to find and interpret $W(20)$. Round the answer to the nearest tenth. 20. _____