LESSON 2.1

NAME _____ DATE _____

Practice A

For use with pages 67–74

Identify the domain and range.

1. Input Output

$2 \longrightarrow 3$
$-1 \longrightarrow 6$
$0 \longrightarrow 16$

2. Input Output

$3 \longrightarrow -9$
$9 \longrightarrow 0$
$4 \longrightarrow$

3. Input Output

$1 \longrightarrow -12$
$2 \longrightarrow 24$
$\longrightarrow 6$

Graph the relation. Then tell whether the relation is a function.

4.

x	0	1	2	3	4
y	3	5	3	1	0

5.

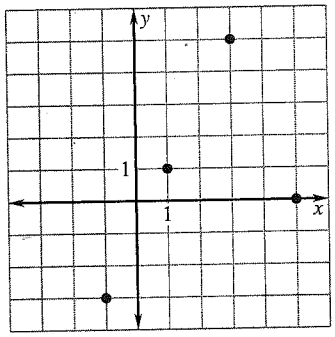
x	−3	−3	4	5	9
y	0	1	−2	3	11

6.

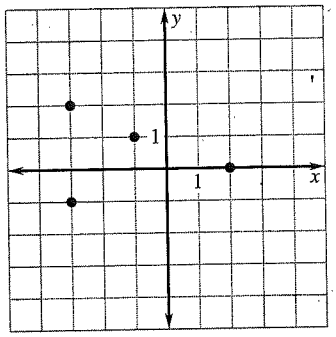
x	−2	−1	0	1	2
y	1	2	3	4	5

Use the vertical line test to determine whether the relation is a function.

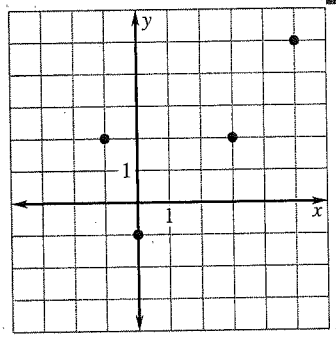
7.



8.



9.



Complete the table of values for the given function. Then graph the function.

10. $y = 2x + 3$

x	−2	−1	0	1	2
y					

11. $y = -\frac{1}{2}x + 4$

x	−2	−1	0	1	2
y					

Graph the function.

12. $y = x - 2$

13. $y = -x + 3$

14. $y = 3x + 4$

15. $y = -6x + 2$

16. $y = 4x - 3$

17. $y = -3x - 5$

18. $y = 8x$

19. $y = -2$

20. $y = \frac{1}{2}x + 5$

21. ***U.S. Open Champions*** The table shows the golf scores of the U.S. Open Champions from 1986 to 1996. Use a coordinate plane to graph these results.

Year	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Score	279	285	281	283	278	277	275	277	279	274	276

LESSON 2.1

NAME _____ DATE _____

Practice B

For use with pages 67–74

Graph the relation. Then tell whether the relation is a function.

1.

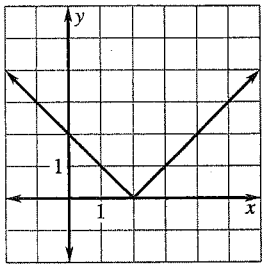
x	-2	-1	0	1	2
y	0	5	6	0	3

2.

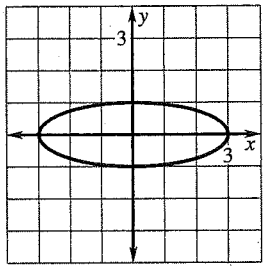
x	-2	-1	0	1	2	-2
y	4	-1	3	2	1	-8

Use the vertical line test to determine whether the relation is a function.

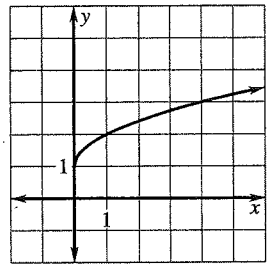
3.



4.



5.



Graph the function.

6. $y = 5x + 1$
7. $y = 3x - 7$
8. $y = -2x$
9. $y = -x + 2$
10. $y = \frac{1}{2}x + 3$
11. $y = -3x - 5$
12. $y = 2x + 3$
13. $y = 2$
14. $y = -\frac{1}{3}x + 1$

Decide whether the function is linear. Then find the indicated value of $f(x)$.

15. $f(x) = x + 7;\ f(-3)$
16. $f(x) = x^3 - x + 2;\ f(1)$
17. $f(x) = 4 - 3x;\ f(2)$
18. $f(x) = |3x + 1|;\ f(-5)$
19. $f(x) = \dfrac{3}{x + 2};\ f(4)$
20. $f(x) = \frac{3}{4}x - 1;\ f(8)$

21. *Geometry* The surface area of a cube with side length x is given by the function $S(x) = 6x^2$. Find $S(3)$. Explain what $S(3)$ represents.

Statistics **In Exercises 22–24, use the following information.**
The table below shows the number of games won and lost by the teams in the Eastern Division of the NFL's National Football Conference for the 1996 season.

Team	*Won, x*	*Lost, y*
Dallas Cowboys	10	6
Philadelphia Eagles	10	6
Washington Redskins	9	7
Arizona Cardinals	7	9
New York Giants	6	10

22. What is the domain of the relation?
23. What is the range of the relation?
24. Is the number of wins a function of the number of losses?

LESSON 2.1

NAME _____ DATE _____

Practice C

For use with pages 67–74

Tell whether the relation is a function.

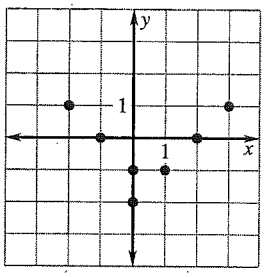
1. Input Output

$3 \longrightarrow -1$
$2 \longrightarrow -5$
$5 \longrightarrow 5$
$4 \longrightarrow 6$

2.

x	1	2	4	7	0
y	0	0	0	0	0

3.



State the quadrant in which each point lies. Assume that *a* and *b* are positive numbers.

4. (a, b) **5.** $(-a, b)$ **6.** $(-a, -b)$ **7.** $(a, -b)$

Graph the function.

8. $y = 3x + 5$ **9.** $y = -3$ **10.** $y = 4 - 7x$

11. $y = \frac{1}{2}x + 2$ **12.** $y = 4 - \frac{3}{4}x$ **13.** $y = \frac{3}{5}x$

Decide whether the function is linear. Then find the indicated value of $f(x)$.

14. $f(x) = 7x + 2,\ f(2)$ **15.** $f(x) = x^2 + 3x - 1,\ f(-3)$ **16.** $f(x) = |x| + x,\ f(-5)$

17. $f(x) = (x + 3)^2,\ f(4)$ **18.** $f(x) = \frac{x - 7}{3x},\ f(2)$ **19.** $f(x) = 2x^3 - 4,\ f(1)$

Earthquakes **In Exercises 20–22, use the table below which shows 10 of the worst earthquakes of the 20th century.**

Location (Year)	*Magnitude, x*	*Deaths, y*
Chile (1960)	8.3	5000
India (1950)	8.7	1530
Japan (1946)	8.4	2000
Chile (1939)	8.3	28,000
India (1934)	8.4	10,700
Japan (1933)	8.9	2990
China (1927)	8.3	200,000
Japan (1923)	8.3	200,000
China (1920)	8.6	100,000
Chile (1906)	8.6	20,000

20. Identify the domain and range of the relation.

21. Graph the relation.

22. Is the number of deaths a function of the magnitude of an earthquake? Explain.