12.1.1 Tables and Functions

Write an equation for a function that gives the values in each table. Use the equation to find the value of y for the indicated value of x.

1.

x	0	1	2	5	7
y	0	4	8	20	

2.

x	4	5	6	7	12
y	0	2	4	6	

Write an equation for the function. Tell what each variable you use represents.

3. The cost of a case of bottled juices is $2 less than the cost of twelve individual bottles.

4. The population of New York is twice as large as the population of Michigan.

5. Oliver is playing a video game. He earns the same number of points for each prize he captures. He earned 1,050 points for 7 prizes, 1,500 points for 10 prizes, and 2,850 points for 19 prizes. Write an equation for the function.

12.1.2 Graphing Functions

Use the given x-values to write solutions of each equation as ordered pairs.

6. $y = -4x + 1$ for $x = 1, 2, 3, 4$

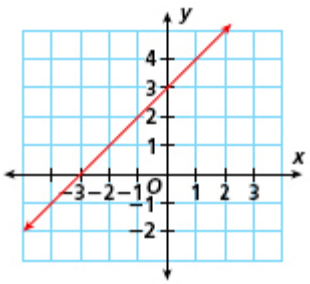
7. $y = 5x - 5$ for $x = 1, 2, 3, 4$

Determine whether each ordered pair is a solution to the given equation.

8. $(3, -10)$; $y = -6x + 8$

9. $(-8, 1)$; $y = 7x - 15$

Use the graph of the linear function to find the value of y for each given value of x.



10. $x = -2$

11. $x = 1$

12. $x = -3$

13. $x = 0$

14. $x = -1$

15. $x = 2$

Graph the function described by each equation.

16. $y = 4x + 1$

17. $y = -x - 2$

18. $y = x - 2$

19. $y = -2x - 4$

20. $y = 3x - 2$

21. $y = -x$

12.1.3 Slope and Rate of Change

Tell whether the rates of change are constant or variable.

22.

x	0	3	4	9	12
y	0	7.5	10	22.5	30

23.

x	0	1	2	5	7
y	0	3	6	15	21

24.

x	0	3	5	6	9
y	11	18	15	16	20

25.

x	2	3	6	7	10
y	0.2	0.3	0.6	0.7	0.1

26. Samantha's coach recorded the amount of time it took her to run several miles during her track workout on Thursday.

Miles	1	2	3	4	5
Minutes	6.5	13	19.5	26	32.5

a. Determine whether the rates of change are constant or variable.

b. Graph the data and connect the points with line segments. If the rate of change is constant, find and interpret the slope.