1-5 Practice

Words, Equations, Tables, and Graphs

Copy and complete each function table. Then state the domain and range of the function.

1. Each copy of a book costs $18 and shipping is $9 per order.

Input (x)	Rule:	Output (y)
2		
3		
4		
5		

2. The number of girls at a camp is 17 less than twice the number of boys.

Input (x)	Rule:	Output (y)
40		
58		
82		
100		

3. Tom's height is 10 inches more than one third of his older sister's height.

Input (x)	Rule:	Output (y)
66		
57		
51		
42		

4 WALKING Carly walked laps in a charity walk-a-thon. The graph shows the number of laps walked over 80 minutes.

a. TABULAR Make a function table showing the input, minutes, and the output, laps walked.

Input (x)	Output (y)
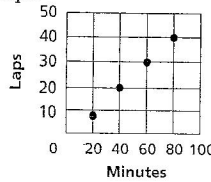
b. ALGEBRAIC Can you write one equation that can be used to find the laps, l, based on the minutes, m? Explain.

c. Is the relation a function? Explain.

Write an equation that describes each sequence. Then find the indicated term.
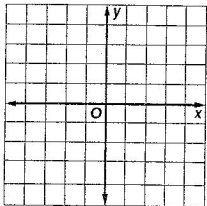
5. 20, 33, 46, 59, ...; 17th term

6. 29, 38, 47, 56, ...; 21st term

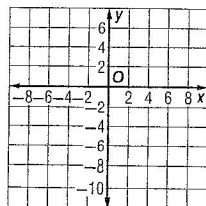**7.** 101, 103, 105, 107, ...; 30th term

8. 64, 67, 70, 73, ...; 44th term
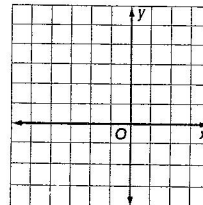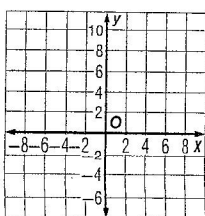
Graph each equation by plotting ordered pairs.

9. $y = 2x - 1$
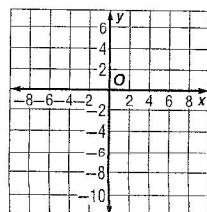

10. $y = -6x + 2$

11. $y = x + 4$

12. $y = 7$

13. $y = 3x - 9$

14. $y = \frac{1}{2}x - 6$
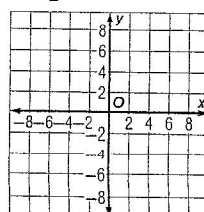
Find the rate of change for each linear function.

15)

Air in Tires (psi) vs Time (min) graph, y-axis 10–50, x-axis 0–25.
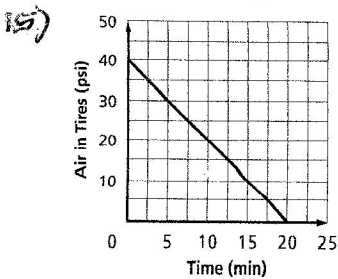
16)

Time (h)	Distance (km)
x	y
0	0
5	510
10	1020
15	1530

TRADE The graph shows the total U.S. exports from 1970 to 2005.

**17)** Find the approximate rate of change between 1970 and 1975.

18) Find the approximate rate of change between 2000 and 2005.

19) Between which two years was the rate of change the least?

U.S. Exports

Exports (billions of dollars) vs Year scatter plot.
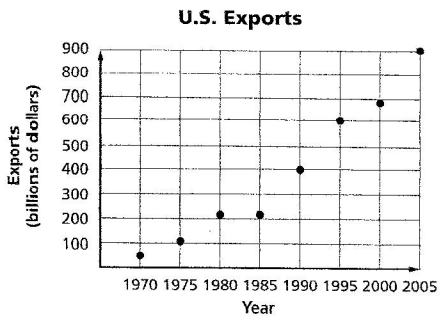
Find the constant rate of change for each linear function and interpret its meaning.

20) Fundraiser Profits

Profit ($) vs Cars Washed graph.
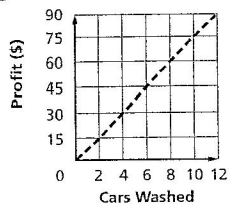
21)

Time (seconds)	Distance (yards)
x	y
1.2	6
2.4	8
3.6	10
4.8	12

Determine whether a proportional linear relationship exists between the two quantities shown in each of the functions indicated. Explain your reasoning.
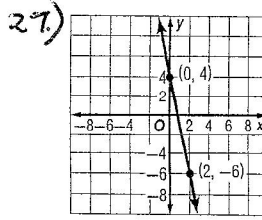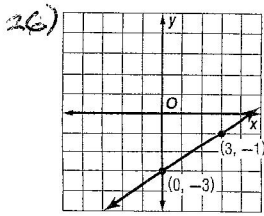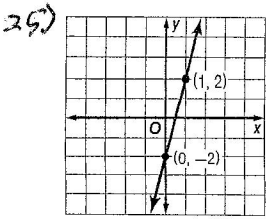
22) Exercise 1

23) Exercise 2

PAPER COSTS The cost of paper varies directly with the number of reams bought. Suppose 2 reams cost $5.10.

24) Write an equation that could be used to find the cost of x reams of paper.

25) Find the cost of 15 reams of paper.

Slope

Find the slope of each line.

25)

Graph with points (1, 2) and (0, −2)

26)

Graph with points (3, −1) and (0, −3)

27)

Graph with points (0, 4) and (2, −6)

Find the slope of the line that passes through each pair of points.

28) $A(-10, 6), B(-5, 8)$

29) $C(7, -3), D(11, -4)$

30) $E(5, 2), F(12, -3)$

31) $G(-15, 7), H(-10, 6)$

32) $J(13, 0), K(-3, -12)$

33) $L(-5, 3), M(-4, 9)$

34) $P(12, 2), Q(18, -2)$

35) $R(-2, -3), S(-2, -5)$

36) $T(-13, 8), U(21, 8)$

State the slope and the y-intercept of the graph of each line.
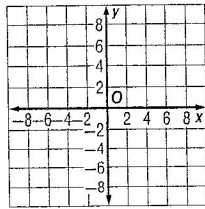
37) $4x - y = 6$

38) $3x + 2y = 8$

39) $y - \frac{1}{2}x = \frac{3}{4}$

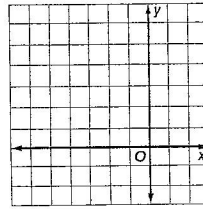**Graph each equation using the slope and y-intercept.**
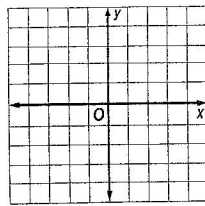
40) slope = $\frac{3}{4}$,
y-intercept = −3
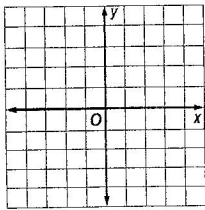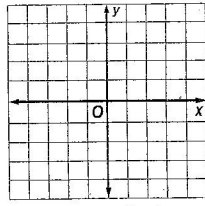

41) slope = $\frac{5}{6}$,
y-intercept = 1

42) slope = 1,
y-intercept = 5
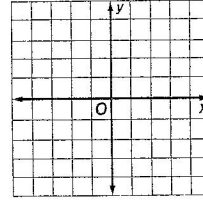

43) $y = -\frac{1}{2}x - 4$

44) $y = x - 4$

45) $y = -6x + 3$
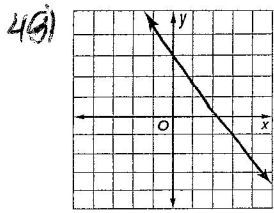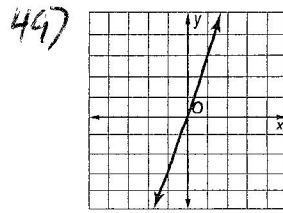

Lesson 8-7

Write an equation for each line in slope-intercept form.

46. slope = 3,
    y-intercept = -2

47) slope = 0,
    y-intercept = 7

48)

49)

Write an equation of the line in slope-intercept form that passes through each pair of points.

50. $(9, 0)$ and $(6, -1)$

51) $(8, 6)$ and $(-8, 2)$

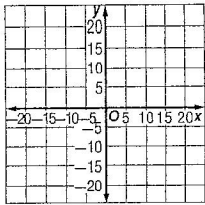52) $(7, -5)$ and $(-4, -5)$

53) $(2, 7)$ and $(-1, 4)$

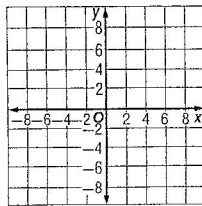54) $(4, 4)$ and $(-8, 10)$

55) $(0, 2)$ and $(-3, 14)$

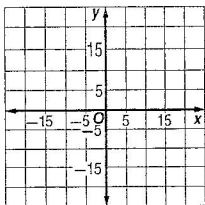**Solve each system of equations by graphing.**
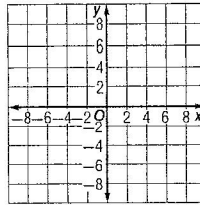
56) $y = x - 9$
    $y = 2x + 4$

57) $y = -2x$
    $y = x + 3$

58) $\frac{1}{2}y = 4x - 6$
    $\frac{1}{4}y = 2x - 3$

59) $y = -x$
    $y = x + 6$

Solve each system of equations by substitution.

60) $y = x - 8$
    $y = 1$

61) $y = x + 4$
    $y = 0$

62) $y = x + 9$
    $y = -4$

63) $y = 11 - x$
    $y = -2$

64) $y = 3x + 10$
    $x = 5$

65) $y = 2x$
    $x = -4$

66) $y = -2x + 1$
    $x = -3$

67) $y = 5 + 3x$
    $y = -4$

68) $16 = 4x - y$
    $y = 2x$

69) $26 = y + x$
    $y = x$