Chapter 3

Determine whether each equation is a linear equation. Write *yes* or *no*. If yes, write the equation in standard form.

1. $-6xy + 2y = 3x$

2. $\frac{1}{2}y - 7 = 3x$

Graph each equation by making a table.

3. $2y - x = 5$

4. $x + y = 6$

Solve each equation.

5. $-5x + 14 = 7x - 28$

6. $-\frac{1}{2}x + 8 = 6x - 12 - \frac{13}{2}x$

7. **NURSERY** The function $b = 100 - 2.5f$ represents the remaining balance of store credit Louie has at Blooms Nursery. Find the zero and explain what it means in this situation.

Determine whether each function is linear. Write *yes* or *no*. Explain.

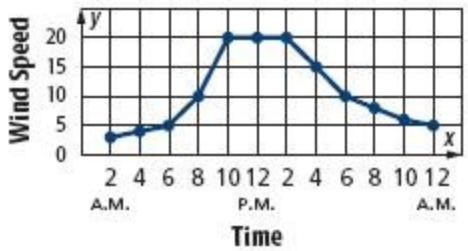
8.

x	−2	0	2	4	6
y	0	6	12	18	24

9.

x	7	4	1	−2	−5
y	14	2	12	4	10

10. **WEATHER** Refer to the graph.



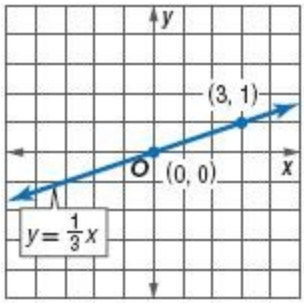
a. Find the rate of change in wind speed between 6 a.m. and 8 A.M.

b. Is there a greater change in wind speed during the day? If so, when does it occur?

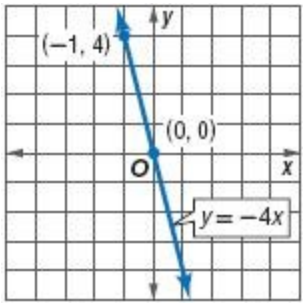
c. The meteorologist says a storm came through at some point during the day. When do you think this may have happened? Explain your reasoning.

Name the constant of variation for each equation. Then find the slope of the line that passes through each pair of points.

11.



12.



Suppose y varies directly as x. Write a direct variation equation that relates x and y. Then solve.

13. If $y = -6$ when $x = 9$, find y when $x = -3$

14. If $y = -7$ when $x = -1$, find x when $y = 0$.

Determine whether each sequence is an arithmetic sequence. Write *yes* or *no*. Explain.

15. –2, 2, –4, 4, –6, 6 ...

16. –6, –3, 0, 3, 6 ...

Write an equation for the *n*th term of each arithmetic sequence. Then graph the first five terms of the sequence.

17. 3, 3.5, 4, 4.5...

18. 1, –1.5, –4, –6.5...

19. **NEWSPAPER** The table shows Blocks Papers the number of newspapers Daniel delivers.

Blocks	Papers
5	40
6	48
7	56
8	64

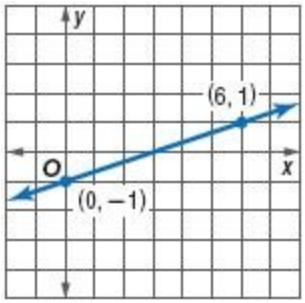
a. Graph the data.

b. Write an equation to describe the relationship.

c. Find the number of papers delivered if he has 11 blocks.

Write an equation in function notation for each relation.

20.



21.