Chapter 5 Practice Test
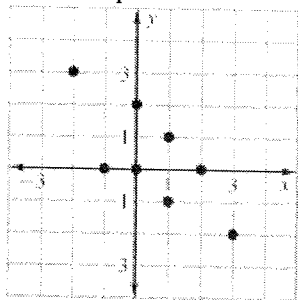
____ 1. What is an equation of the line that passes through the points $(-3, 4)$ and $(-9, 6)$?

    a. $y = -\dfrac{1}{3}x - \dfrac{5}{3}$

    b. $y = -\dfrac{1}{3}x + 3$

    c. $y = -3x - 5$

    d. $y = -3x + 12$

____ 2. A line with a slope of -3 passes through the point $(4, -3)$. If $(-3, p)$ is another point on the line, what is the value of p?

    a. -21 b. 0 c. 18 d. 24

____ 3. An equation of the line parallel to the line $y = \dfrac{1}{3}x - 2$ and passing through $(3, -5)$ is _____.

    a. $y = -3x + 4$ b. $y = \dfrac{1}{3}x + \dfrac{14}{3}$ c. $y = -3x - 12$ d. $y = \dfrac{1}{3}x - 6$

____ 4. An equation of the line perpendicular to the line $y = -\dfrac{3}{4}x + 4$ with a y-intercept of -5 is _____.

    a. $y = -\dfrac{3}{4}x - 5$ b. $y = \dfrac{3}{4}x - 5$ c. $y = \dfrac{4}{3}x - 5$ d. $y = -\dfrac{4}{3}x + 5$

____ 5. What is an equation of the line that passes through $(-6, 2)$ and has a slope of $-\dfrac{2}{3}$?

    a. $y = -\dfrac{2}{3}x - \dfrac{14}{3}$ b. $y = -\dfrac{2}{3}x - 2$ c. $y = -\dfrac{2}{3}x + 6$ d. $y = -\dfrac{2}{3}x - 6$

_____ 6. Which equation best models the data in the scatter plot?

a. $y = -x + 1$ b. $y = -x - 1$ c. $y = x + 1$ d. $y = x - 1$

Write an equation of the line in slope-intercept form.

7. The slope is $-\dfrac{4}{3}$; the y-intercept is -2.

8. The slope is 0; the y-intercept is -5.

Write an equation of the line that passes through the point and has the given slope. Write the equation in slope-intercept form.

9. $\left(4, \ -5\right), \ m = \dfrac{2}{3}$

10. $\left(-4, 3\right), \ m = -\dfrac{3}{4}$

Write an equation of the line that is parallel to the given line and passes through the given point.

11. $y = -4x - 7, \ \left(5, -3\right)$

12. $y = -\frac{2}{3}x + 4, \; (-5, 5)$

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

13. $(-6, 1), (3, -7)$

14. $\left(-\frac{2}{3}, 4\right), \left(6, -\frac{1}{3}\right)$

15. Write an equation of a line that is perpendicular to $y = -\frac{3}{4}x + 2$ and passes through $(-4, 1)$.

Write an equation in point-slope form of the line that passes through the given points.

16. $(-2, 5), (4, -3)$

17. $\left(\frac{1}{2}, -1\right), \left(-\frac{2}{3}, 6\right)$

Write the equation in standard form with integer coefficients.

18. $y = \frac{1}{2}x - \frac{3}{5}$

19. $y = -\dfrac{8}{3}x + \dfrac{4}{9}$

Write the equations in standard form of the horizontal and vertical lines that pass through the point.

20. $(-5, -7)$

21. $(6, -10)$

22. You are in charge of bringing snacks to a picnic. You decide to buy grapes and pretzels. The grapes are \$2.39 per pound and the pretzels cost \$1.89 a bag. You have \$11 to spend. Write an equation in standard form that models the different amounts of grapes and pretzels that you can buy.

State whether x and y have a *positive correlation*, a *negative correlation*, or *relatively no correlation*.
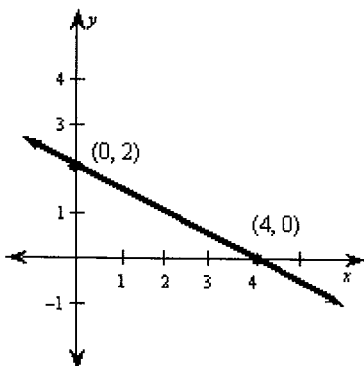
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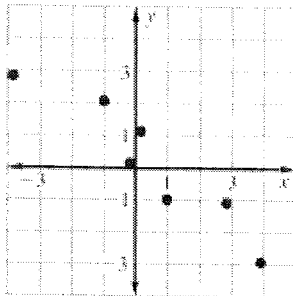
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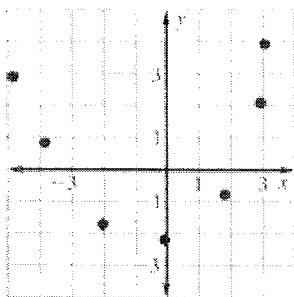
25. Write the equation of the line passing through $(2, -7)$, $(2, 0)$, and $(2, 5)$.

26. A line passes through the points $(6, 4)$ and $(3, -2)$.
a. What is the slope of the line? b. What is an equation of the line in standard form?

27. Write an equation of the line shown.

28. This year the Wolverine basketball team scored the following number of points in its 10 games.

Game	1	2	3	4	5	6	7	8	9	10
Points	72	73	83	84	78	85	84	93	85	93

a. Make a scatter plot of the ten data points. Let x = the game number and y = the number of points scored during the game.
b. Find a line of fit. Graph the line on the scatter plot in part (a). Label the line.

29. In the table, x represents the number of hours you have worked at a lawn-mowing job and y represents the number of ounces of water left in your water cooler. Construct a scatter plot with a fitted line for this data and find an equation you think best represents the data. What can you conclude about the data, based on the scatter plot?

x	1	2	3	4	5	6	7	8
y	64	55	46	38	28	22	12	7
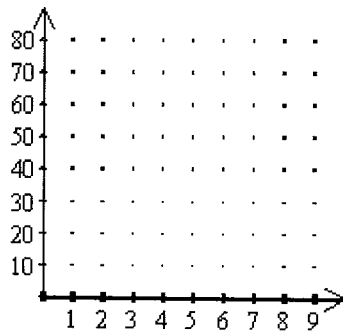
30. The table below gives the number of hours a local baseball team spent on batting practice during each week and the number of hits they had in games that weekend.

Number of hours	0	3	5	7	10
Number of hits	2	4	5	8	10

a) Make a scatter plot of the data. Perform linear regression to find an equation of the best-fitting line. Then graph the line.
b) Use your equation to predict the number of hits following a week when 20 h were spent on batting practice.

_____ 31. Bianca is making home-made cards to send to friends and family and to sell at the local craft fair. This scatter plot shows the total number of cards she had made after each hour she worked on the task.
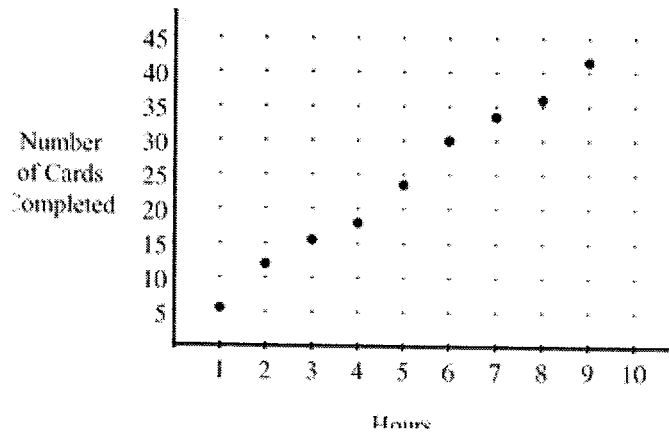

Using this information, what is the best prediction of the number of cards Bianca can make in 12 hours?

a. 64 b. 39 c. 54 d. 74

Chapter 5 Practice Test
Answer Section

1. B
2. C
3. D
4. C
5. B
6. A
7. $y = -\dfrac{4}{3}x - 2$
8. $y = -5$
9. $y = \dfrac{2}{3}x - \dfrac{23}{3}$
10. $y = -\dfrac{3}{4}x$
11. $y = -4x + 17$
12. $y = -\dfrac{2}{3}x + \dfrac{5}{3}$
13. $y = -\dfrac{8}{9}x - \dfrac{13}{3}$
14. $y = -\dfrac{13}{20}x + \dfrac{107}{30}$
15. $y = \dfrac{4}{3}x + \dfrac{19}{3}$
16. $y - 5 = -\dfrac{4}{3}(x + 2)$ or $y + 3 = -\dfrac{4}{3}(x - 4)$
17. $y + 1 = -6\left(x - \dfrac{1}{2}\right)$ or $y - 6 = -6\left(x + \dfrac{2}{3}\right)$
18. $5x - 10y = 6$
19. $24x + 9y = 4$
20. $x = -5,\ y = -7$
21. $x = 6,\ y = -10$
22. $2.39x + 1.89y = 11$
23. negative correlation
24. relatively no correlation
25. $x = 2$
26. a. 2
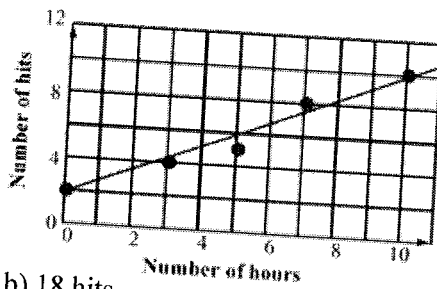   b. $2x - y = 8$.
27. $y = -\dfrac{1}{2}x + 2$

28. a.

line of fit
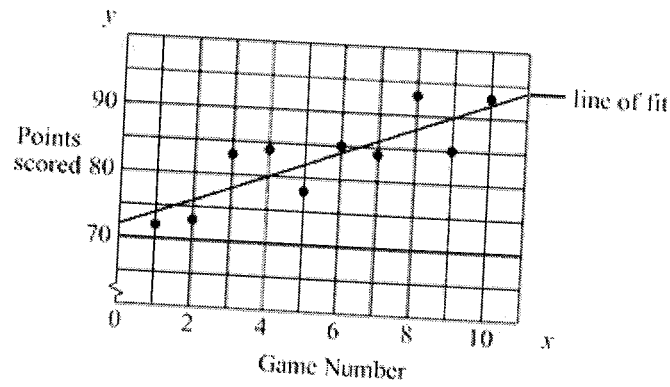
b. Sample equation $y = 2x + 72$
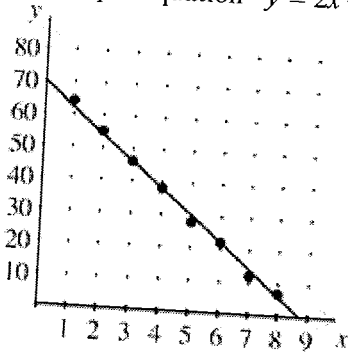
29.

$y = 70 - 8x$

The more hours you mow lawns, the less water you have in your cooler.

30. a) $y = 0.83x + 1.66$

b) 18 hits

31. C