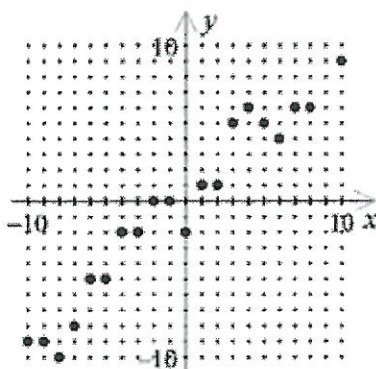


### Algebra I Chapter 5 Exam

1. Vincent pays \$255 in advance on his account at the athletic club. Each time he uses the club, \$10 is deducted from the account. Write an equation that represents the value remaining in his account after  $x$  visits to the club. Find the value remaining in the account after 11 visits.

- a.  $V = 10 - 255x$ ; \$145
- b.  $V = 255 - 10x$ ; \$2561
- c.  $V = 255 - 10x$ ; \$145
- d.  $V = 255 - 10x$ ; \$2575

2. What type of relationship is shown by the scatter plot?

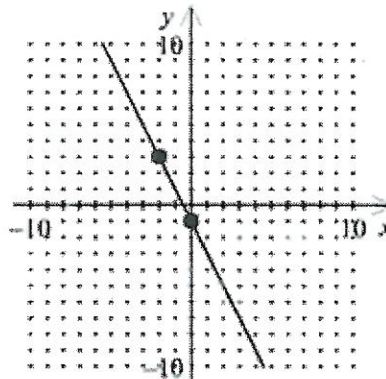


- a. strong positive correlation
- b. relatively no correlation
- c. weak positive correlation
- d. strong negative correlation

3. Write an equation of the line with undefined slope that passes through the point (2, 4).

$$x = 2$$

4. Which of the following lines is NOT parallel to the line shown in the graph?



- a.  $y + 2x = 3$
- b.  $-2x - y = 3$
- c.  $-4x - 2y = 3$
- d.  $-2x + y = -1$

5. Write an equation of the line that passes through (2, 1) and is parallel to the line  $y = 2x + 7$ .

$$y = 2(x - 2) + 1$$

6. Write an equation of the line with slope  $-\frac{3}{2}$  and y-intercept -5.

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

7. Write an equation of the line that passes through (5, 7) and is perpendicular to the line  $y = \frac{1}{2}x + 2$ .

$$y = -2(x - 5) + 7$$

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

8. (-1, -8), (4, -6)  $m = \frac{-6 - (-8)}{4 - (-1)} = \frac{2}{5}$

$$y = \frac{2}{5}(x + 1) - 8$$

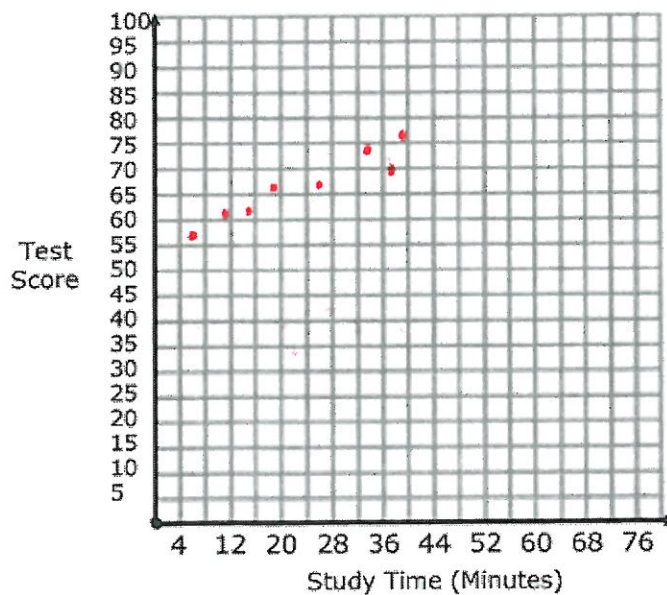
$$y = \frac{2}{5}(x - 4) - 6$$

9. Write an equation of a line with slope -2 passing through the point (3, -2).

$$y = -2(x - 3) - 2$$

10. The table shows the study times and test scores for a number of students. Draw a scatter plot of score versus time.

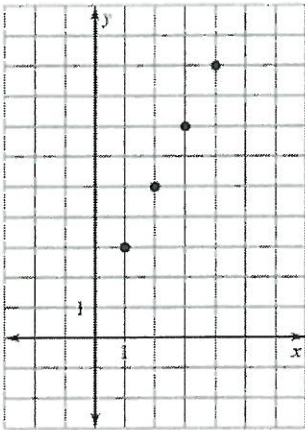
Study time (min)	6	11	15	19	26	33	37	39
Test score	57	61	62	66	66	74	70	76



11. An amusement park charges \$10.00 for admission and \$4.00 per ride. Write an equation that gives the cost (in dollars) as a function of number of rides.

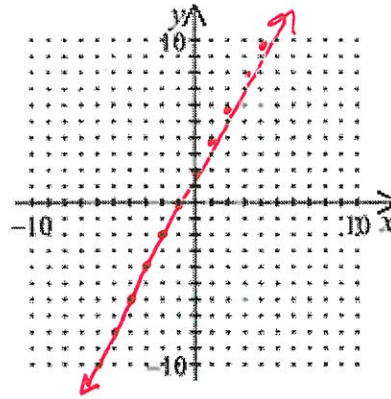
$$y = 4x + 10$$

12. Which equation matches the scatter plot?



- a.  $y = 2 - 2x$   
 b.  $y = 2x - 1$   
 c.  $y = 2x + 1$   
 d.  $y = 1 - 2x$

13. A line passes through the point  $(-2, -2)$  and has a slope of 2. Sketch the line and write its equation in slope-intercept form.



Write an equation in standard form of the line that passes through the given point and has the given slope  $m$  or that passes through the two given points.

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

$$y = -\frac{3}{2}(x+3) + 2$$

$$y = -\frac{3}{2}x - \frac{9}{2} + 2$$

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

$$\frac{3}{2}x + y = -\frac{5}{2}$$

Write an equation for the function in the form  $f(x) = mx + b$ .

15.  $f(-4) = 4, f(0) = -4$   $\frac{-4-4}{0-4} = \frac{-8}{4} = -2$

$$Y = -2X - 4$$

Find the missing coefficient in the equation of the line that passes through the given point. Write the completed equation.

16.  $Ax + 2y = 10, (2, 3)$

$$A \cdot 2 + 2 \cdot 3 = 10$$

$$A2 + 6 = 10$$

$$A2 = 4$$

$$A = 2$$

17. Find the  $y$ -intercept of a line that passes through  $(5, -3)$  and has a slope of  $-1$ .

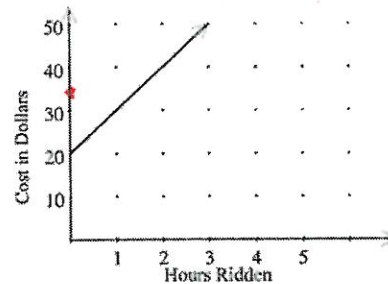
$$Y = -1(x-5) - 3$$

$$Y = -x + 5 - 3$$

$$Y = -x + 2$$

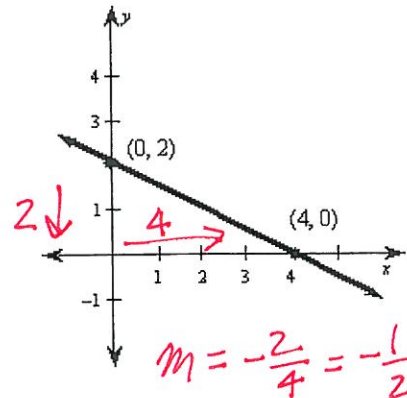
$$2$$

18. The graph for a stable that charges a \$20 flat fee plus \$10 per hour for horseback riding is shown below. How will the graph change if the stable changes its charges to a flat fee of \$35 plus \$15 per hour?



- The slope will be 15 and the  $y$ -intercept will be 20.
- The slope will be 35 and the  $y$ -intercept will be 15.
- The slope will be 10 and the  $y$ -intercept will be 35.
- The slope will be 15 and the  $y$ -intercept will be 35.

19. Write an equation of the line shown.



$$Y = -\frac{1}{2}X + 2$$



20. A revenue of \$1500 is obtained from the sales of item  $A$  at \$50 each and item  $B$  at \$25 each. Write an equation that shows the relationship between the numbers of items sold.

$$50A + 25B = 1500$$

21. Write the equation in slope-intercept form of the line that passes through the points  $(7, -1)$  and  $(2, 9)$ .

$$m = \frac{9 - (-1)}{2 - 7} = \frac{10}{-5} = -2$$

$$y = -2(x - 7) - 1$$

$$y = -2x + 14 - 1$$

$$y = -2x + 13$$

22. A line on a graph passes through the points  $(-1, 3)$  and  $(5, 15)$ .
- What is the slope of this line?
  - What is the  $y$ -intercept of the line?
  - Write an equation for the line.

$$A) m = \frac{15 - 3}{5 - (-1)} = \frac{12}{6} = 2$$

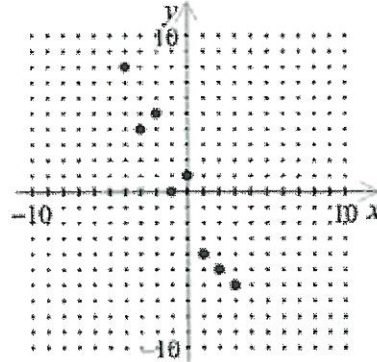
$$B) y = 2(x + 1) + 3$$

$$y = 2x + 2 + 3$$

$$y = 2x + 5 \leftarrow 5$$

$$C) y = 2x + 5$$

23. Tell whether  $x$  and  $y$  show a *positive correlation*, *negative correlation*, or *relatively no correlation*.



NEGATIVE

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

24.  $(-7, 1)$ ,  $m = \frac{1}{2}$

$$y = \frac{1}{2}(x + 7) + 1$$

