Chapter 2 Review without calculator **NAME** _____ **Period** ___

1. Find the slope of the line passing through the points $(5,7)$ and $(-4,2)$.

   a. $\frac{9}{5}$

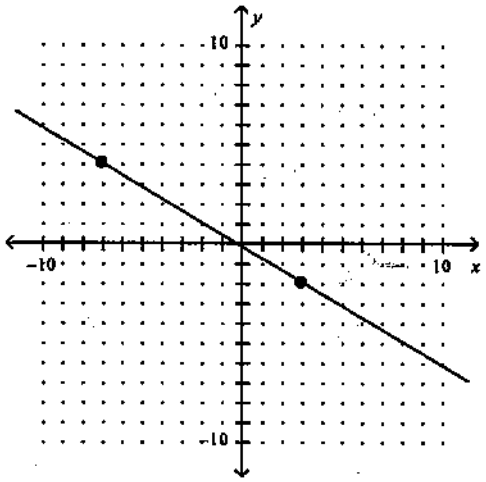
   b. 9

   c. $\frac{1}{9}$

   d. $\frac{5}{9}$

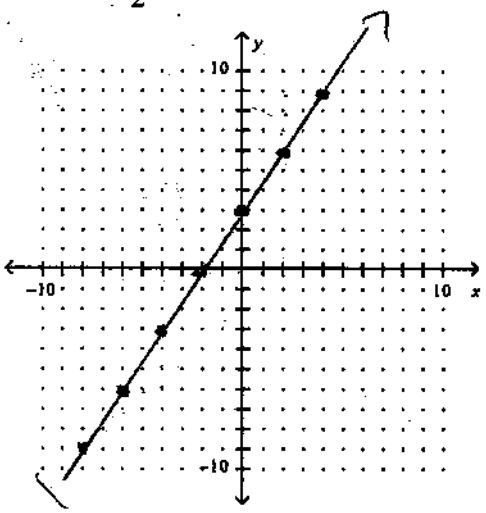
$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7-2}{5-(-4)} = \frac{5}{9}$

2. Find the slope of the line.



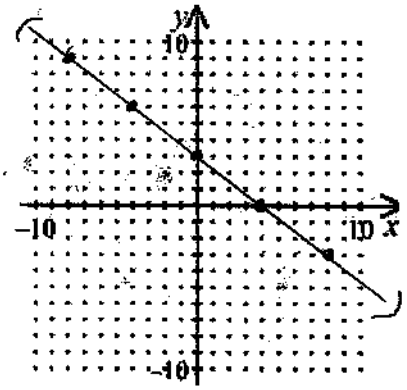
$m = \frac{-2-4}{3-(-7)} = -\frac{6}{10} = -\frac{3}{5}$

3. Graph $y = \frac{3}{2}x + 3$.

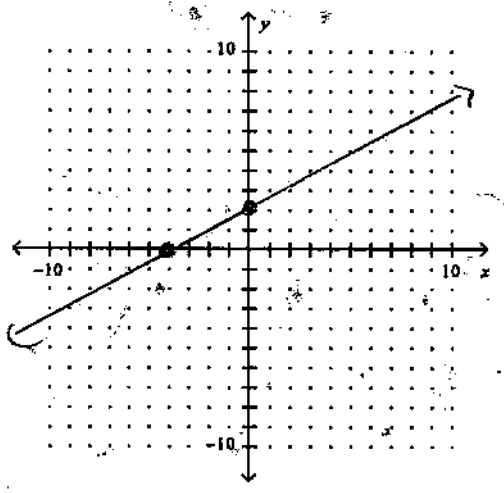


Graph the equation.

4. $y = -\frac{3}{4}x + 3$



5. Graph the linear equation by finding x- and y-intercepts. $2x - 4y = -8$



let $y = 0$

$2x = -8$

$x = -4$ $(-4, 0)$

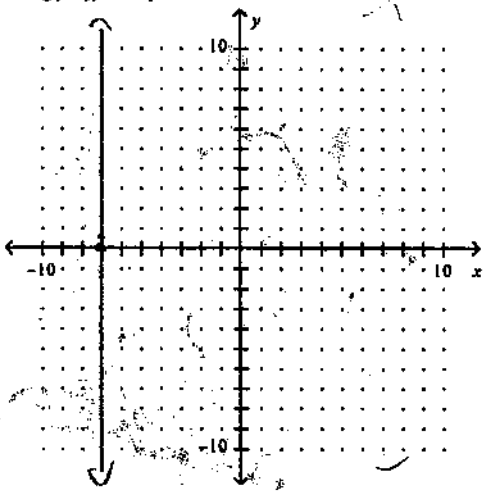
let $x = 0$

$-4y = -8$

$y = 2$ $(0, 2)$

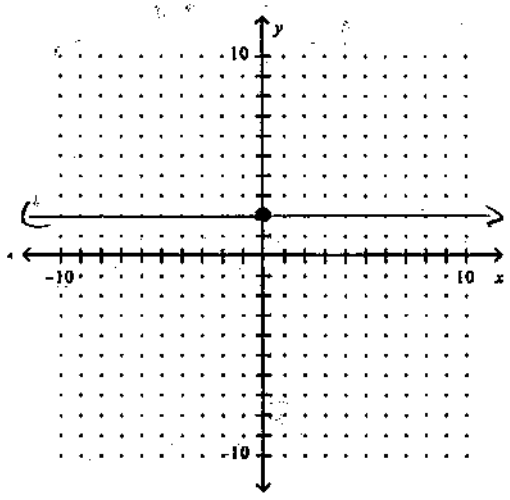
Graph the linear equation.

6. $x = -7$



Graph the linear equation.

7. $y = 2$



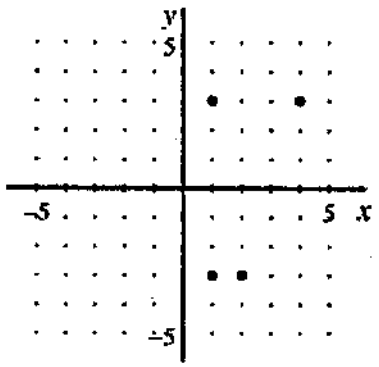
Chapter 2 Review-with calculator **NAME** _____ **PERIOD** ____

1. Determine whether the relation is a function.
(0, 4), (1, 4), (2, 5), (3, 6), (4, 6)

Yes, every input (x-value) has exactly 1 output (y-value)

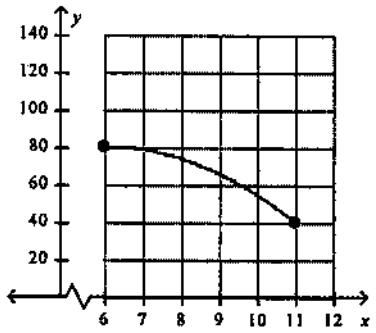
Use the vertical line test to determine if the graph represents *y* as a function of *x*.

2.



No, it is not a function.
It fails the vertical line test: some inputs have more than one output.

b 3. What is the domain of the function in the graph?



a. $40 \le x \le 80$
b. $6 \le x \le 11$
c. $6 \le y \le 11$
d. $40 \le y \le 80$

Tell whether the function is linear. Then evaluate the function when $x = -6$.

4. $f(x) = 4 + x$ Linear

$f(-6) = 4 + (-6)$

$f(-6) = -2$

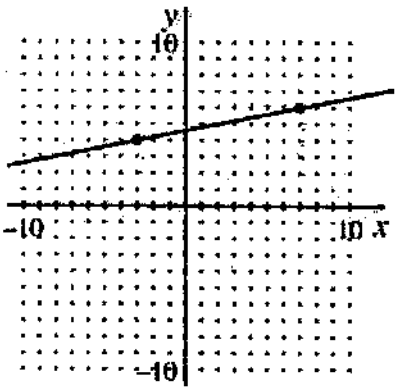
5. $f(x) = 5|2x|$ Not linear

$f(-6) = 5|2(-6)|$

$f(-6) = 5|-12|$

$f(-6) = 60$

6. Find the slope of the line.



$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{6-4}{7-(-3)} = \frac{2}{10} = \frac{1}{5}$

7. Find the slope of the line passing through (3, –1) and (6, 4).

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4-(-1)}{6-3} = \frac{5}{3}$

8. Line 1 contains (–3, 5) and (2, 0). Line 2 contains (1, –3) and (–1, 3). Are the lines parallel, perpendicular, or neither?

$m_1 = \frac{0-5}{2-(-3)} = \frac{-5}{5} = -1$

$m_2 = \frac{3-(-3)}{-1-1} = \frac{6}{-2} = -3$

Neither (slopes are neither equal nor opp recip recals)

9. In 1983 the pollution in a local lake was rated at 1.4 parts per million. By 1987 it had risen to 2.6 parts per million. Which of the following expresses the rate of change in parts per million per year from 1983 to 1987?

a. $\frac{1}{7}$

(b.) $\frac{3}{10}$

c. 7

d. $\frac{1}{4}$

$m = \frac{2.6-1.4}{1987-1983} = \frac{1.2}{4} = \frac{6}{20} = \frac{3}{10}$

10. Which equation has the steeper graph, $y = \frac{5}{3}x - 2$ or $y = \frac{3}{2}x + 3$?

$y = \frac{5}{3}x - 2$, because its slope $(\frac{5}{3})$ is greater than the slope of the other line $(\frac{3}{2})$

11. Find the x- and y-intercepts of $y = -4x + 6$.

$4x + y = 6$

let $y = 0$

$4x = 6$

$x = \frac{3}{2}$ x-int: $(\frac{3}{2}, 0)$

let $x = 0$

$y = 6$ y-int: $(0, 6)$

12. Find the slope and y-intercept of the graph of $3x - 7y = 42$.

$-7y = -3x + 42$ slope: $\frac{3}{7}$

$y = \frac{3}{7}x - 6$ y-int: -6

Write an equation of the line with the given slope and y-intercept.

13. slope = –6; y-intercept = 12

$y = -6x + 12$

14. Write the equation of the line, in slope-intercept form, that passes through the point $(-2, 3)$ and has slope 3.

point-slope: $y - y_1 = m(x - x_1)$

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

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

$y - 3 = 3x + 6$

$y = 3x + 9$

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

15. $y = 3x + 1$; $(0, -2)$

$m = 3$

$b = -2$

$y = 3x - 2$

Write an equation of the line that is perpendicular to the given line and passes through the given point. Express your answer in slope-intercept form.

16. $y = -5x + 5$; $(0, -5)$

$m = \frac{1}{5}$ $\left(\frac{1}{5} \cdot (-5) = -1\right)$

$b = -5$

$y = \frac{1}{5}x - 5$

17. Find the slope-intercept equation of the line passing through the points (–5, –3) and (–2, 6).

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{6 - (-3)}{-2 - (-5)} = \frac{9}{3} = 3$

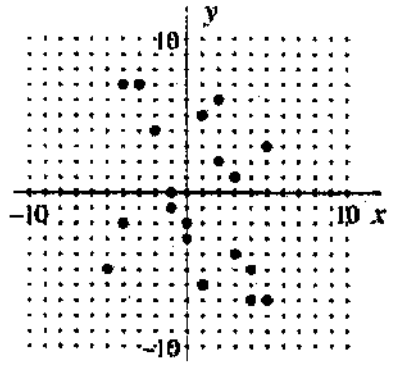
18. The warehouse store has cashews that sell for $4.75 a pound and pecans that sell for $2.25 a pound. Write an equation that represents how much of each type of nut can be bought with $13.

let a = pounds of cashews

and b = pounds of pecans

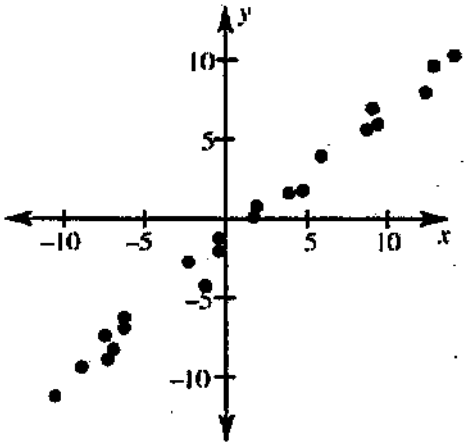
$4.75a + 2.25b = 13$

19. Describe the correlation shown by the scatter plot.



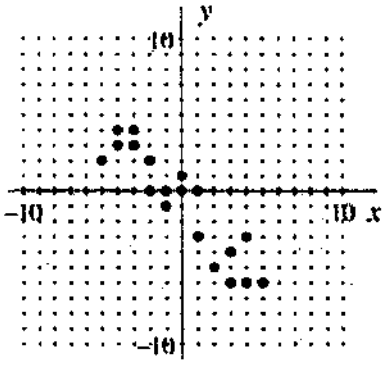
No correlation

20. For the scatter plot shown, state whether x and y have a *positive correlation*, a *negative correlation*, or *no correlation*.



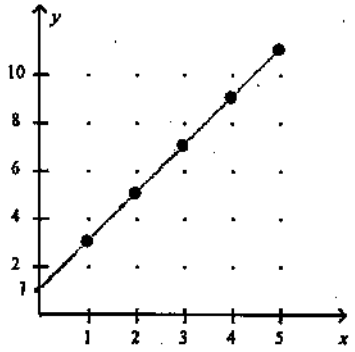
positive correlation

21. Describe the correlation shown by the scatter plot.



negative correlation

a 22. Which equation represents the scatter plot?



$m = 2$
$b = 1$

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

b 23. For the data given, find the equation of the best-fitting line.

x	2	3	6	8	10
y	3	4	6	5	10

a. $y = 0.729x + 2.51$
(b.) $y = 0.71x + 1.51$
c. $y = 0.71x + 2.51$
d. $y = 0.729x + 1.51$

$y = 0.71x + 1.51$