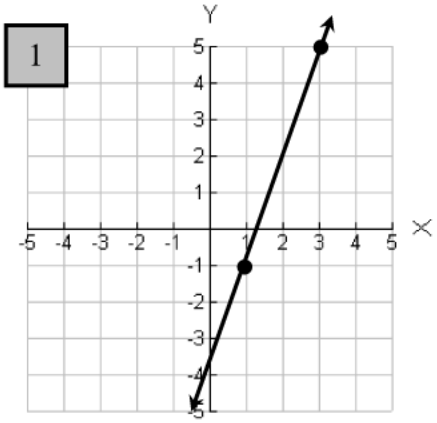
Name _____ Date_____

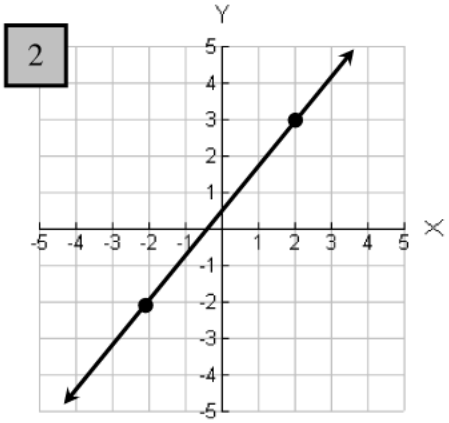
Worksheet A5: Slope Intercept Form

Find the Slope of each line below

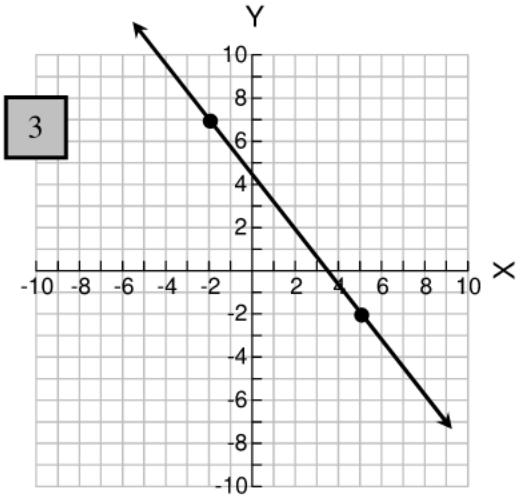
1



2

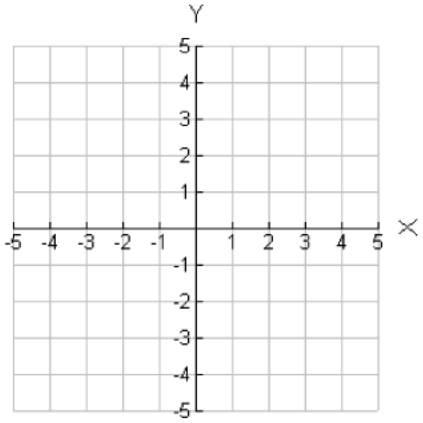


3



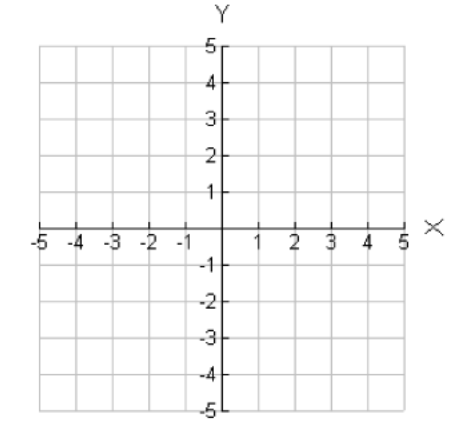
Graph the lines containing the point below, then <u>find their slopes</u> from counting on the graph!

4. $(-4,2)$ and $(2,-3)$



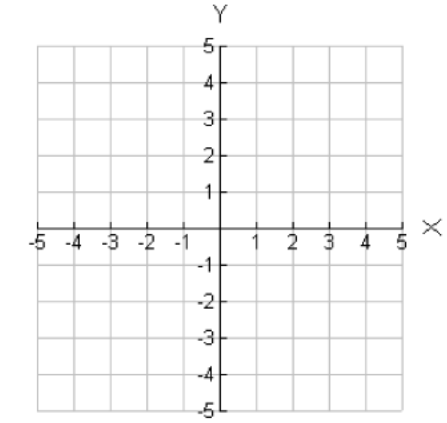
m = _____

5. $(-2,4)$ and $(3,0)$



m = _____

6. $(0,5)$ and $(-4,-3)$



m = _____

(continued on back)

Find the slopes of the lines containing the points given:

Hint: Use the Slope Formula

$m =$

7. $(4,0)$ and $(5,7)$

8. $(0,8)$ and $(-3,10)$

9. $(3,-2)$ and $(5,-6)$

10. $(0,0)$ and $(2,-3)$

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

Find the slope of each line below. Use "undefined slope" or "zero slope" where appropriate

12. $x=-8$

13. $y=2$

14. $x=9$

15. $y=-9$

_____ _____ _____ _____

Name _____ Date_____

Worksheet B5: Graphing Linear Equations

Graph each of the linear equations below using three points.

1. $x+3y=6$

Solve for y below:

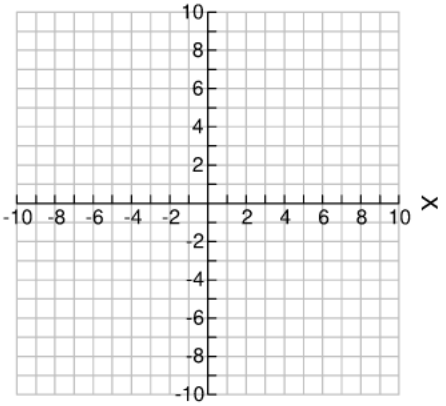
$x+3y=6$

$3y=-x+6$

$y=\frac{-x}{3}+\frac{6}{3}$

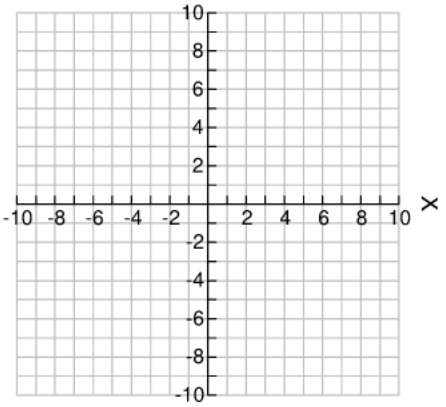
$y=\frac{-x}{3}+2$

x	$y=\frac{-x}{3}+2$	y	(x, y)
0			
3			
-3			



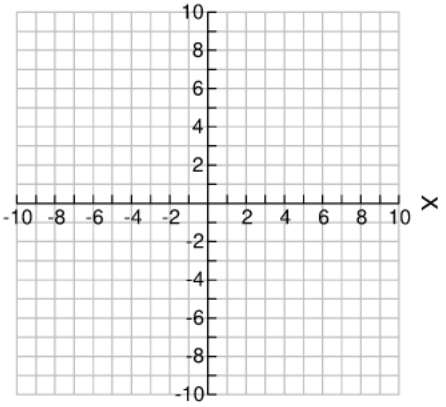
2. $-x+3y=9$

x		y	(x, y)



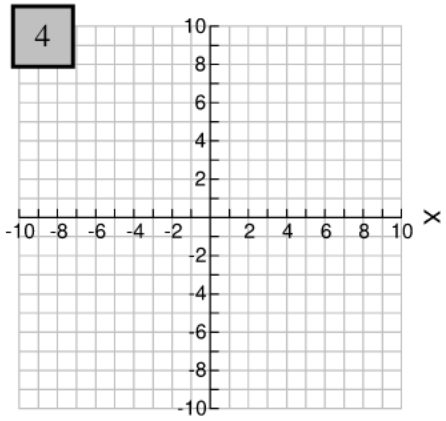
3. $2y-2=6x$

x		y	(x, y)



Find the intercepts for each equation, then graph the line using the intercepts!

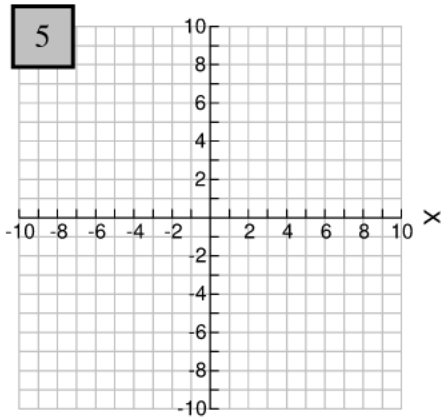
4



$x - 1 = y$ x-int: $y = 0$ y-int: $x = 0$

Show Work Here

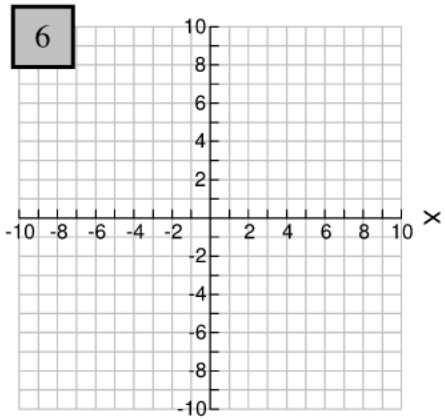
5



$2x - 1 = y$ x-int: y-int:

Show Work Here

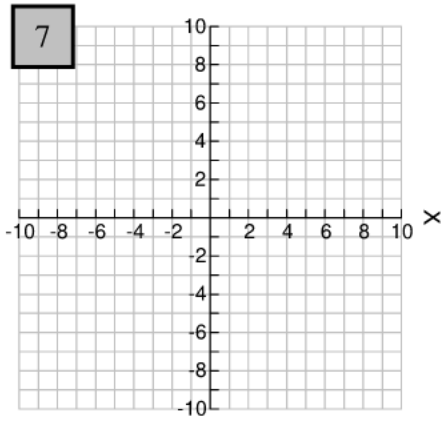
6



$4x - 3y = 12$

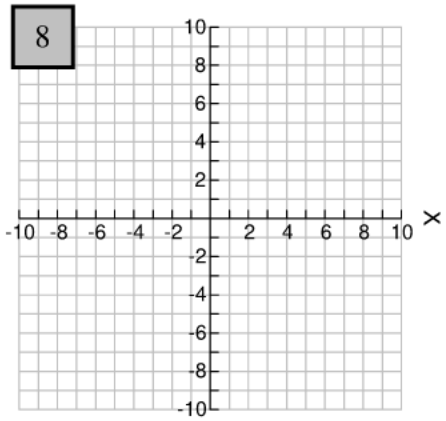
Show Work Here

7



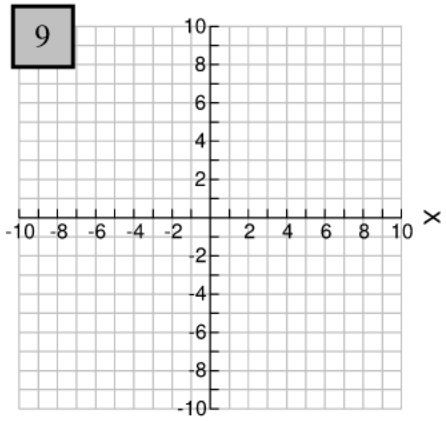
$7x + 2y = 6$

8



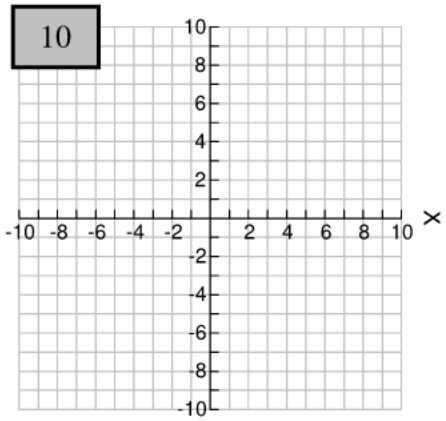
$y = -4 - 4x$

9



$-3x = 6y - 2$

10



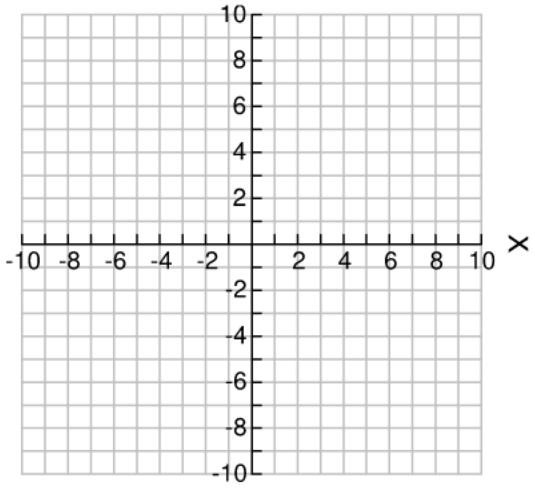
$3x - 6y = 12$

Identify the slope and y-intercept of each equation. You may need to write the equation in slope-intercept form first!

b represents the beginning, graph this first! Write it as a point (0, b)

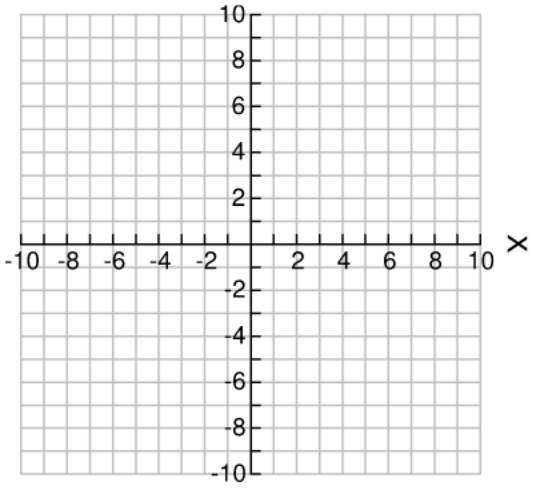
m represents the move, make the move from the y-intercept. Write it as a fraction!

11. $y = \frac{2}{3}x + 3$ →



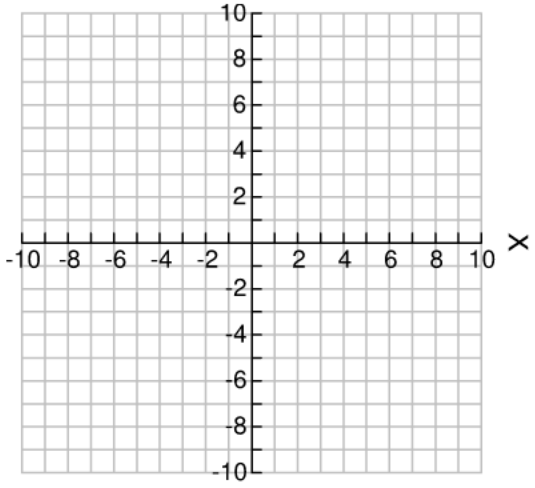
$b =$ _____ $m =$ ____

12. $y = \frac{5}{2}x - 1$ →



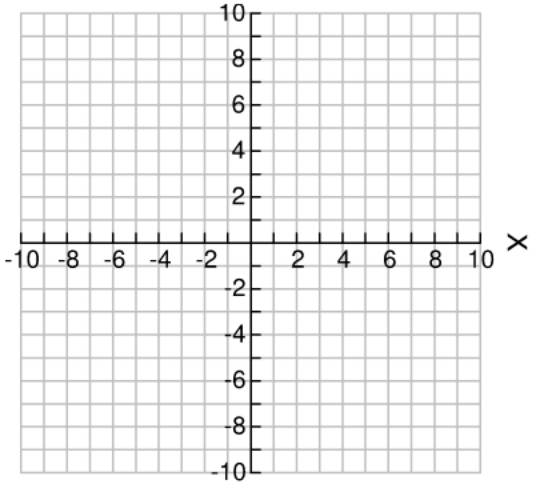
$b =$ _____ $m =$ ____

13. $y = \frac{-3}{2}x - 4$ →



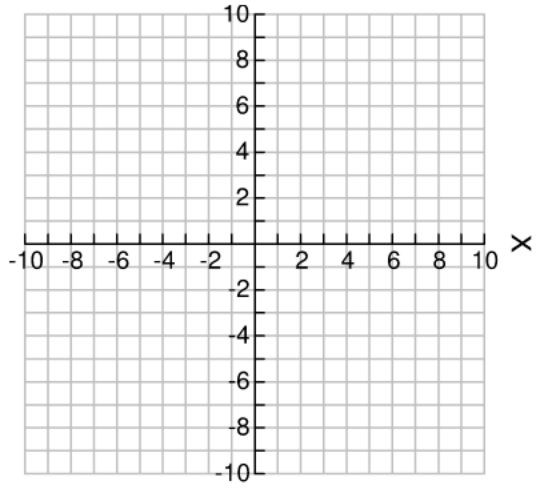
$b =$ _____ $m =$ ____

14. $y = \frac{-1}{4}x + 3$ →



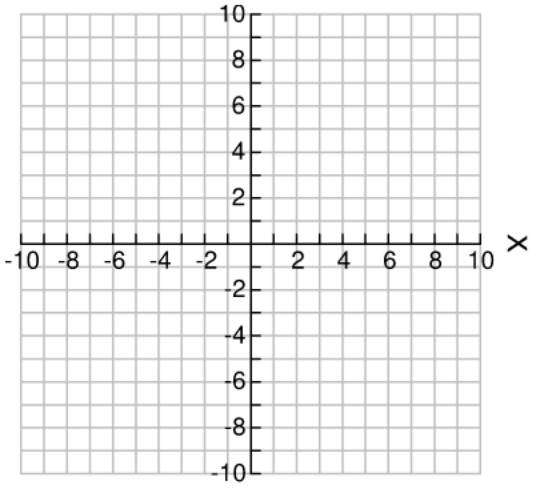
$b =$ _____ $m =$ ____

15. $y = 2x - 5$ →



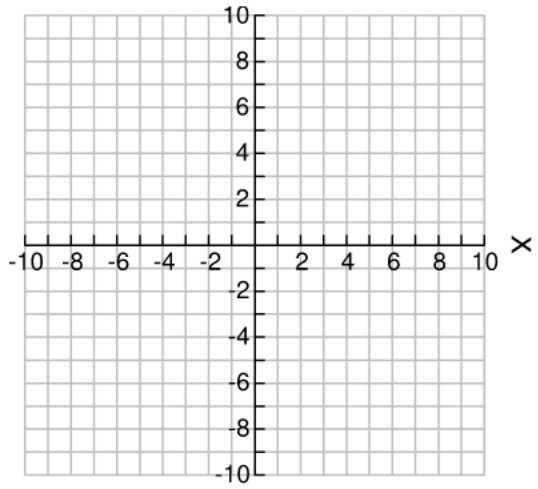
$b =$ _____ $m =$ ____

16. $y = 3x - 2$ →



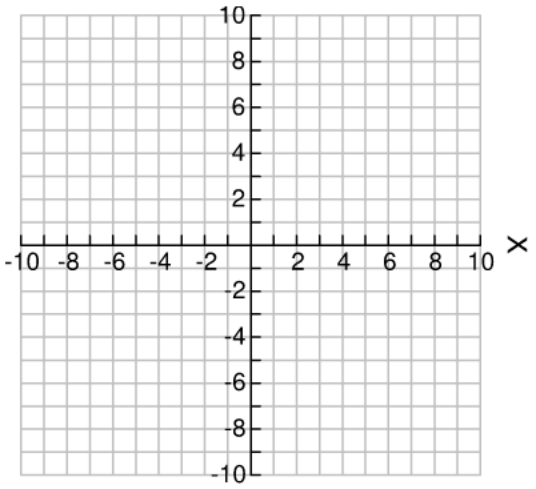
$b =$ _____ $m =$ ____

17. $7x + 2y = 10$ →



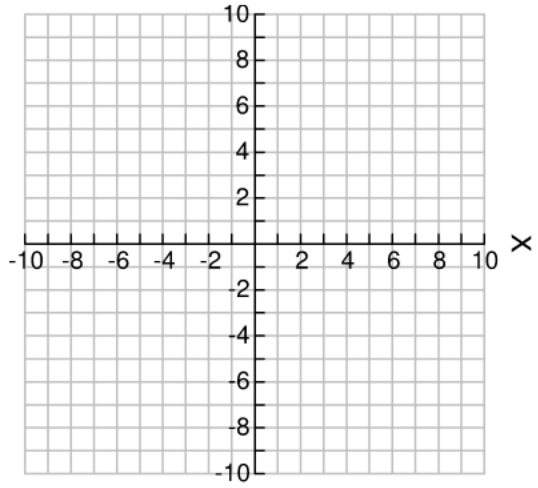
$b =$ _____ $m =$ ____

18. $3x + 5y = 10$ →



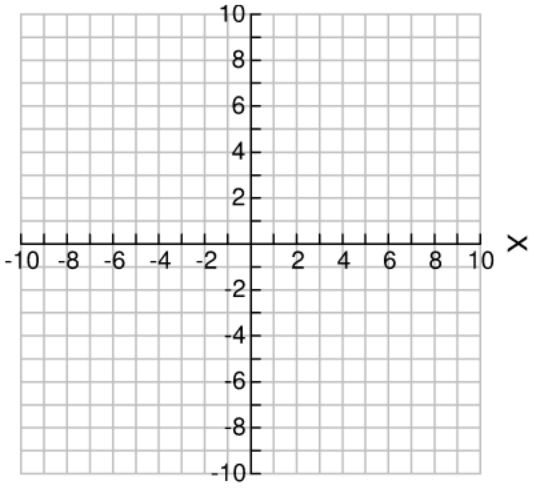
$b =$ _____ $m =$ ____

19. $x - 4y = 12$ →



$b =$ _____ $m =$ ____

20. $2x - 5y = 15$ →



$b =$ _____ $m =$ ____

Name _____ Date_____

Worksheet C5: Writing the Equation of a Line

Directions: Find the equation of the line. Use either slope-intercept form or point-slope form. Make sure that you show all of your work!

1. (2, 1) and (-3, -14)

2. (3, 1) and (-2, 6)

3. (-2, 7) and (0, 1)

4. (-4, 6) and (1, -4)

5. (1, 3) and (0, -3)

6. The line goes through the point (-2, -4) and is parallel to the equation y = -x + 5.

7. The line goes through the point (2, 9) and is parallel to the equation y = 5x -1

8. The line goes through the point (-1, 2) and is perpendicular to the equation $y = \frac{1}{4}x - 5$.

9. The line goes through the point (4, -1) and is perpendicular to the equation y = 2x + 4.

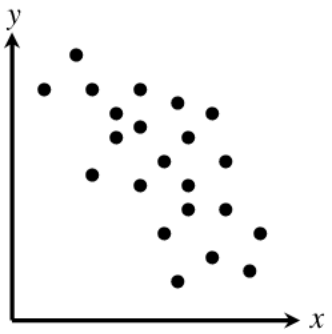
10. The line goes through the point (-2, -3) and is parallel to the equation y = 3x -8.

Name _____ Date_____

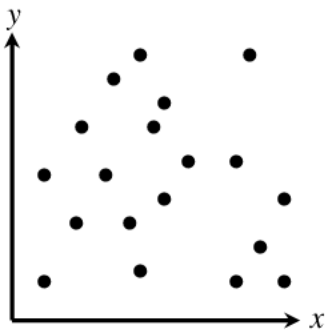
Worksheet D5: Scatter Plots & Correlation

What type of relationship exists between the variables in each graph?

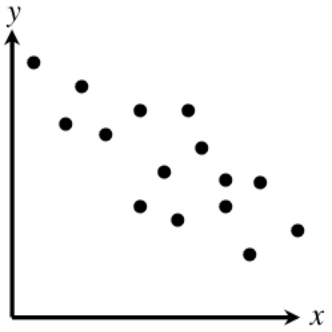
1



2



3



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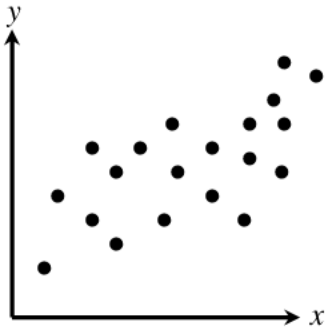

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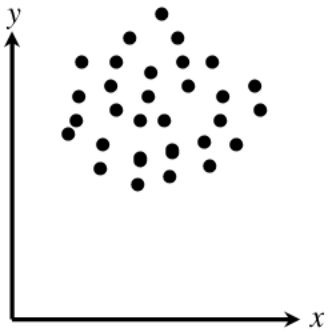

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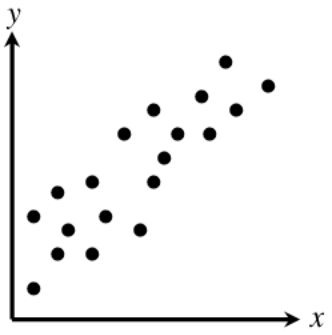


Determine what type of relationship you might expect given the following sets of data…

7. The weight of a sirloin steak and the selling price

8. The number of problems assigned for homework and the amount of time spent doing the homework assignment.

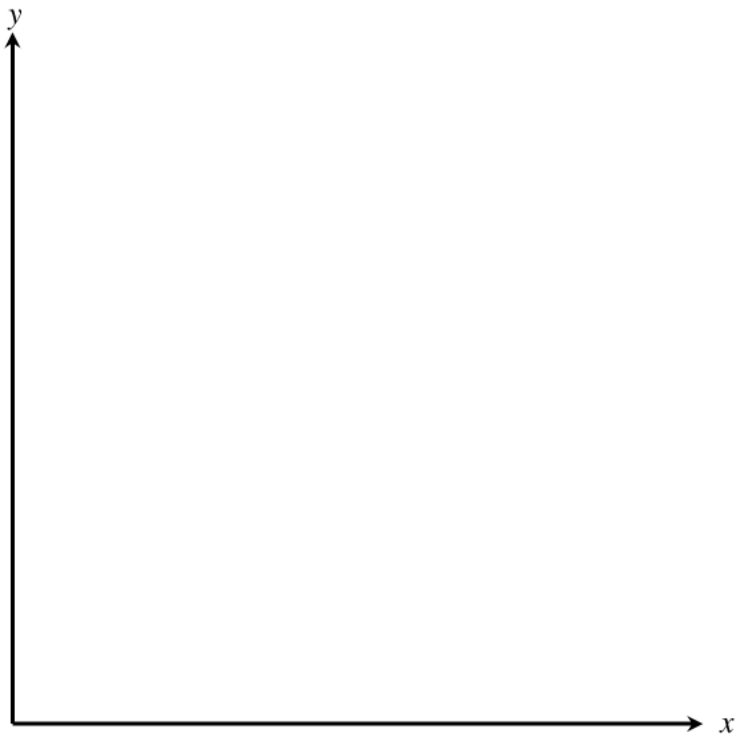
9. Athletic ability and musical ability

10. Math anxiety and the score on a math exam

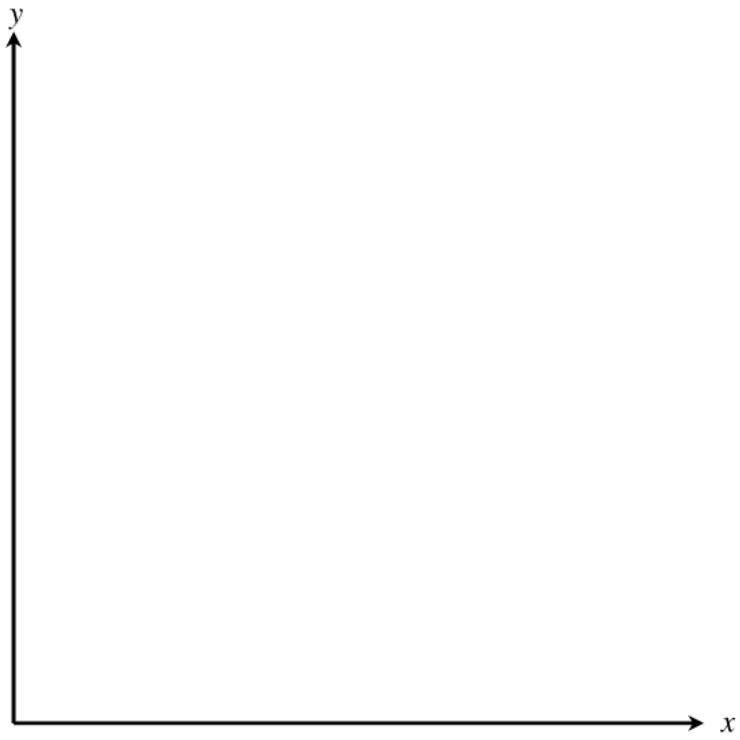
Use the information in the following table to answer number 11 below.

Student	1	2	3	4	5	6	7	8	9	10	11	12
GPA	3.6	2.9	3.2	2.6	2.8	2.1	3.3	3.3	3.2	3.3	2.5	2.8
Shoe Size	8.5	7.5	9	11	6	8	8.5	7	10	9.5	8	10.5
Height (in.)	65	69	70	71	62	66	78	65	69	70	63	71
Weight (lb)	141	145	163	170	109	150	156	138	166	168	118	188

11. Make a scatter plot for the data consisting of grade point average (GPA) and shoe size. Based on the scatter plot, what type of relationship exists between GPA and shoe size? (Hint: GPA is the *x*, and shoe size is the *y*.)



12. Based on the chart on the previous page, make a scatter plot for the data consisting of height and weight. Based on the scatter plot, what type of relationship exists between a students height and weight?



Name _____ Date_____

Worksheet E5: Linear Regression

Solve. Assume a linear relationship fits each set of data.

1. A long-distance telephone company advertised the following rates: "5 minutes (m) for just \$.85 (p) and 10 minutes for just \$1.10." Use the ordered pairs (m, p).
   a. Find the linear equation for these data points

   b. Use the linear equation to find the cost of a 20-minute phone call.

2. For a ground temperature of $15°C$, the air temperature (t) at an altitude of $500m$ (h) is $10°C$. At $2000m$, the air temperature is $-5°C$. Use the ordered pair (h,t).
   a. Find a linear equation for these data points.

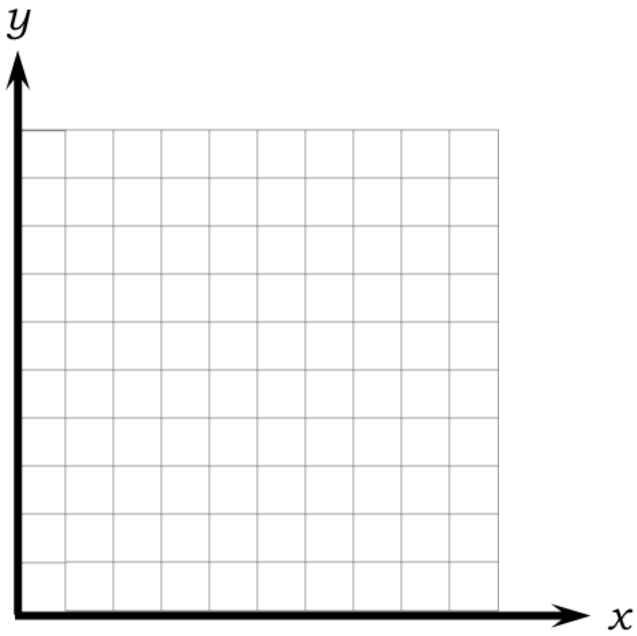
   b. Use this linear equation to find the air temperature at $1500m$

3. A school record in a certain race is 1970 (t) was 3.8 minutes (r). In 1990 the school record was 3.65 minutes. Use the ordered pairs (t, r).
   a. Find the linear equation for these data points.

   b. Use this linear equation to predict the school's record in 2000.

4. Graph the ordered pairs (d, y). Draw the line of best fit and find an equation of the line.

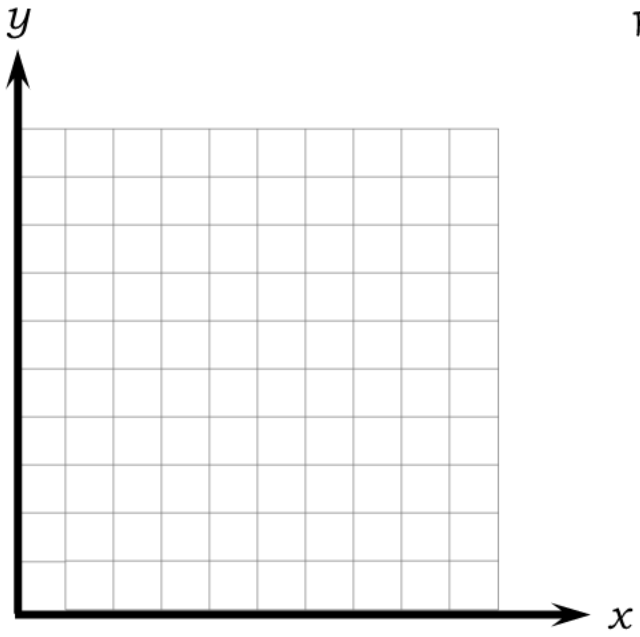
Diameter of tree trunk (d)	4	10	40	35	25	35	20
Age (y)	1	5	20	15	10	15	20



Find the equation of your line below:

5. A motel owners' association compared the prices of motel rooms in and near a small city. Each ordered pair represents the distance (d) in miles a motel is from the center of the city and the cost (c) of a motel room for one person. Graph the ordered pairs (d, c). Draw the line of best fit and find an equation of the line.

Distance in miles (d)	1	2	2	3	3	4	5	5	6
Cost (c)	\$80	\$75	\$55	\$60	\$45	\$55	\$40	\$50	\$35



Find the equation of your line below:

Name _____ Date_____

Worksheet F5: Test Review

1. Slope-intercept form: _____
2. Point slope form: _____

3. Find the slope of the line containing the points (5, -3) and (-2, 5).

4. Identify the slope and the y-intercept for the line with equation $y = -5x + 7$.

   Slope = _____ y-intercept = _____

5. Write the equation in slope-intercept form for the line whose y-intercept is -4 and whose slope is –1.

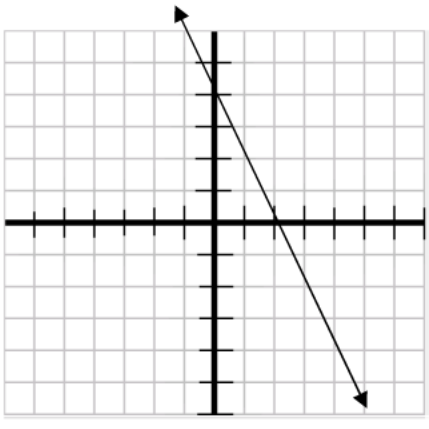
6. What is the y-intercept of the line $15x = 5y - 10$?

   a. –5 b. –3 c. 2 d. 15

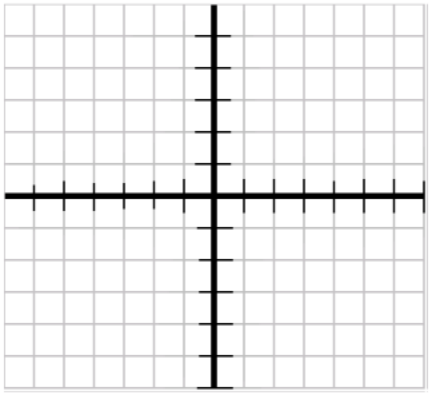
7. What is the equation of the line whose slope is –2 and whose y-intercept is 8?

   a. $y = 8x + 2$ b. $y = 8x - 2$ c. $y = 2x - 8$ d. $y = -2x + 8$

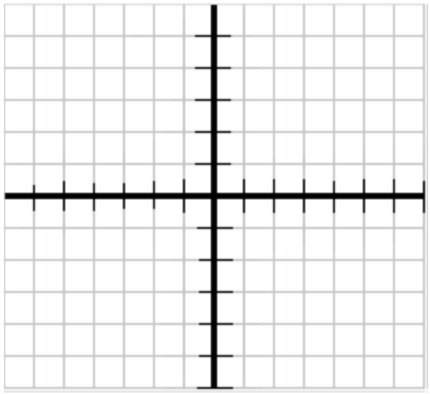
8. Write an equation in slope-intercept form for the line graphed below.



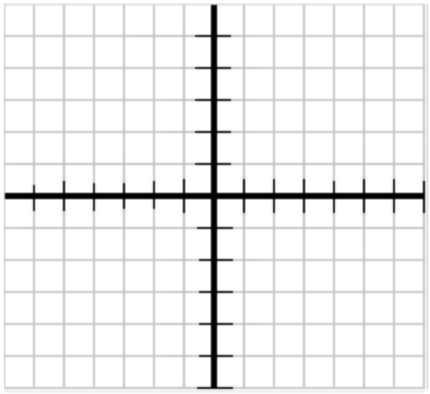
9. Use the slope and the y-intercept to graph the equation $-\frac{3}{4}x + y = 1$.



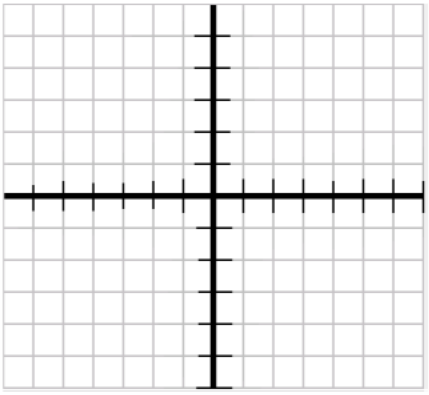
10. Use the slope and the y-intercept to graph the equation $-3x + 2y = 7$.



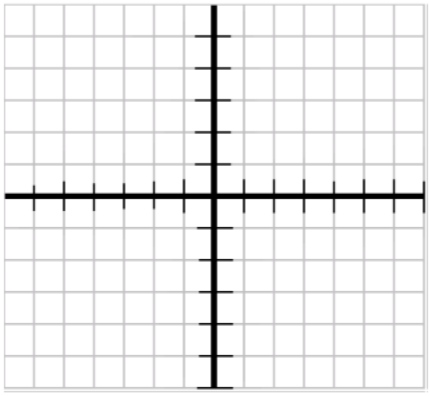
11. Use the x-intercept and y-intercept to graph $3x - 5y = 15$.



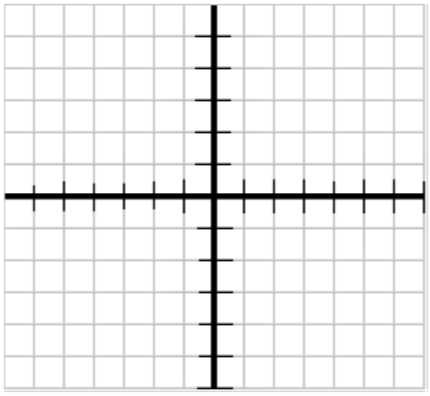
12. Use the x-intercept and y-intercept to graph $y - 3 = -2x$.



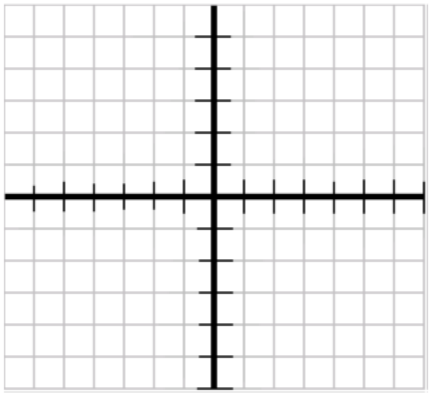
13. Use the x-intercept and y-intercept to graph $-2x + 4y = 6$.



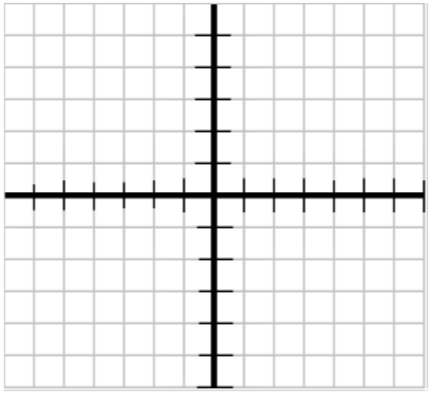
14. Graph $4x + y = 3$ using slope intercept form or the x-intercept and y-intercept.



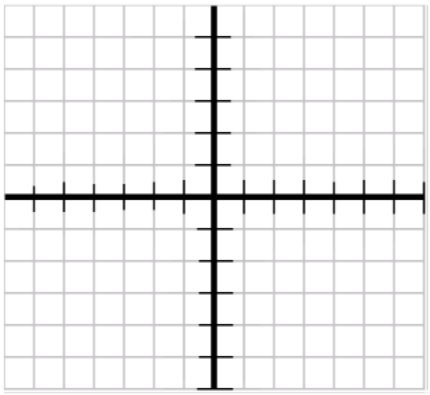
15. Graph $x + 2y = 10$ using slope intercept form or the x-intercept and y-intercept.



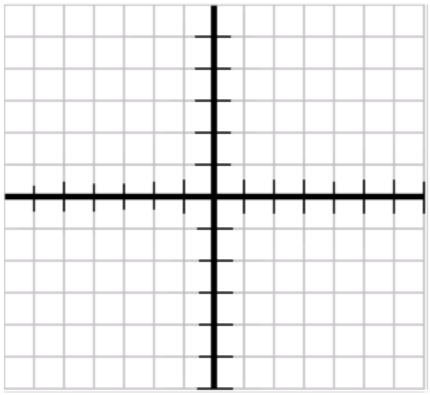
16. Graph $y = 4x - 6$ using an x, y chart (find 3 points)



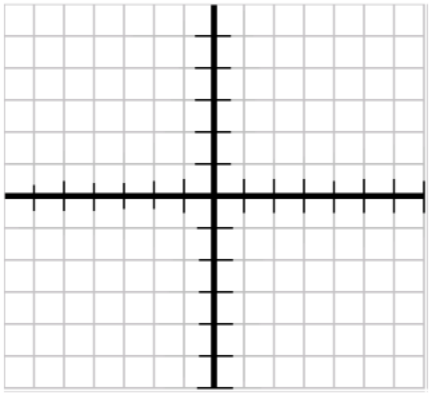
17. Graph $x = 5$.



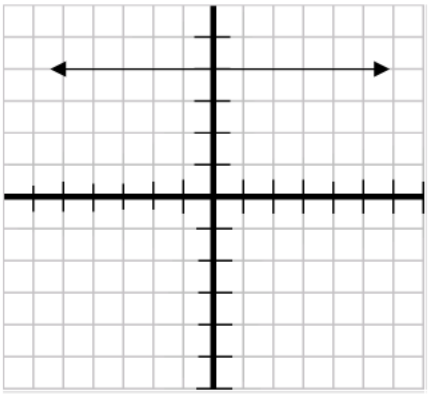
18. Graph $y = -2$.



19. Graph $y = 0$.



20. Write the equation for the line graphed below.



21. Find the equation of a line that is parallel to $y = 2x - 3$ and has a y-intercept of 4.

22. Find the equation of a line that is perpendicular to $y = -3x + 7$ and has a y-intercept of -2.

23. Find the equation of a line that is parallel to $y = 2x - 1$ and goes through the point (6, 2).

24. Find the equation of a line that is perpendicular to $y = \frac{1}{3}x + 2$ and goes through the point (1, 7).

25. The total length (l) of a certain species of snake is related linearly to the tail length (t) of this snake. Here are the measurements for two snakes of this species. Snake 1: $l = 150$mm and $t = 19$mm; Snake 2: $l = 300$mm and $t = 40$mm. Use the ordered pairs (l, t).

    a. Find a linear equation for these data points.

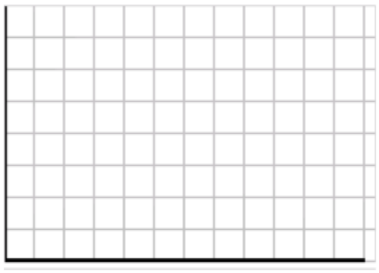
    b. Use this linear equation to estimate the tail length of a snake with total length of 200mm.

    c. Use this linear equation to estimate the tail length of a snake with total length of 350mm.

26-28.

Year	1950	1955	1963	1969	1975	1982	1995	1998
Price($)	0.25	0.35	0.40	0.50	0.75	1.25	1.75	1.95

26. On the grid below, create a scatter plot of the data in the table.



27. Let x represent years since 1900 and let y represent the cost of a hamburger in dollars. Find an equation for the best-fit line for the data.

28. Use the best-fit line to estimate the price of a hamburger at this diner in 1990.