

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Period: \_\_\_\_\_

## Review for Test : Linear Functions

Slope Formula:  $m = \frac{\Delta y}{\Delta x}$

1. Jenny is renting a moving truck. She will have to pay a one-time fee for insurance coverage and pay the daily rate for the truck each day she uses it. The total cost of renting the truck in terms of the number of days the move will take can be modeled by the equation  $y = 110x + 85$ .  $b = y\text{-int.}$

What's the slope? 110What's the y-intercept? 85

Match the parts of the equation in column A to their correct representation in column B.

## Column A

What does  $x$  represent?

# of days

What does  $y$  represent?total cost  
renting a truck

What does the slope represent?

renting fee  
per day

What does the y-intercept represent?

one  
time insurance fee

## Column B

1. the one-time fee for insurance coverage

2. the cost per day for renting the truck; the daily rate

3. the number of days the move takes

4. the total cost

2. Find the slope of the line through the following points.

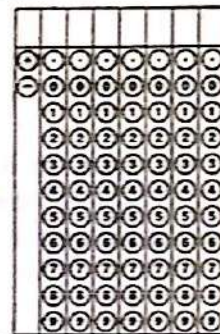
a.) (2, -3) and (5, 1)

$$m = \frac{4}{3}$$

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

$$m = \frac{0}{1} = 0$$

$$m = \frac{-2 - (-2)}{4 - 3} = \frac{0}{1} = 0$$



3. Which of the following equations represents a linear function?

A.  $y = x^2$

B.  $y = -2x^3$

C.  $y = \frac{1}{x}$

D.  $y = x$  linear

4. Use the line in the graph to the right to answer questions.

$$-\frac{3}{4}$$

a.) What is  $m$ ?

$$4$$

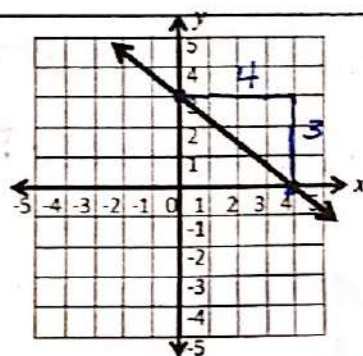
b.) What is the x-intercept?

$$3$$

c.) What is the y-intercept?

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

d.) What is the equation of the line?

5. Write an equation for a line with slope of  $-\frac{2}{3}$  and y-intercept 4.

$$y = -\frac{2}{3}x + 4$$

6. Write an equation for a line that goes through (0, -5) with a slope of -3

$$y = mx + b$$

$$-5 = -3(0) + b$$

$$-5 = b$$

7. The table below shows ordered pairs of a linear function.

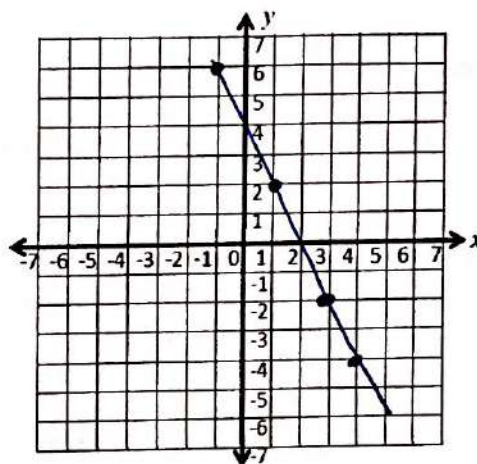
| X  | Y  |
|----|----|
| -1 | 6  |
| 1  | 2  |
| 3  | -2 |
| 4  | -4 |

What is the x intercept? 2

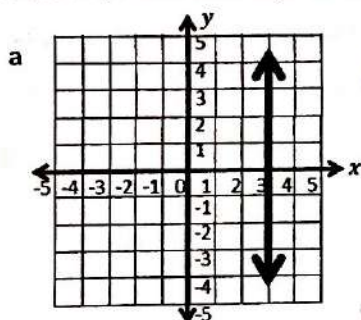
What is the y intercept? 4

What is the Rate of Change? 2

What is the equation of the line?  
 $y = 2x + 4$



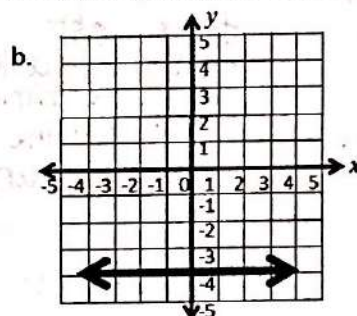
8. State the slope and intercept of the following lines and write the equation for each.



Slope: undefined

Intercept:  $x = 3$

Equation:  $x = 3$



Slope: 0

Intercept: -4

Equation:  $y = -4$

9. Jerod is buying a house for \$65,000. His monthly payments will be \$725 per month. Write an equation Jerod could use to calculate how much money he still owes for his house as a function of how many months he has been paying for the house. Then state what the slope, y-intercept, and x-intercept are and what they represent, and state what the domain values (x values) represent and what the range values (y values) represent.

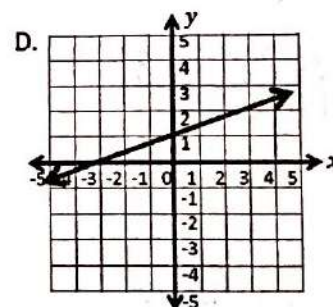
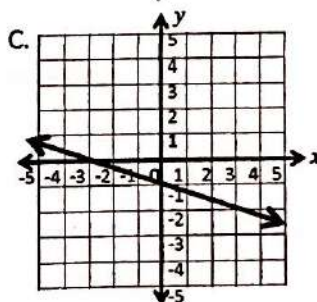
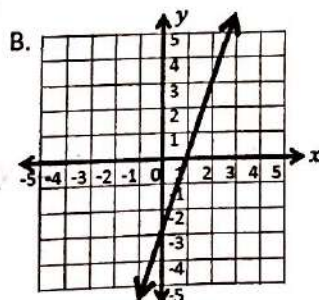
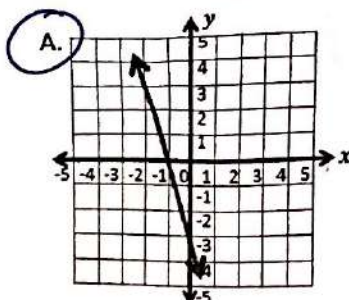
Equation:  $y = 725x + 65,000$       Slope: 725      Slope Represents: monthly house payment

Domain (x) represents: # of monthly payments      Range (y) represents: total owed on house

y-int: initial cost of house - \$65,000      y-int represents: 65,000      x-int: when house is paid off

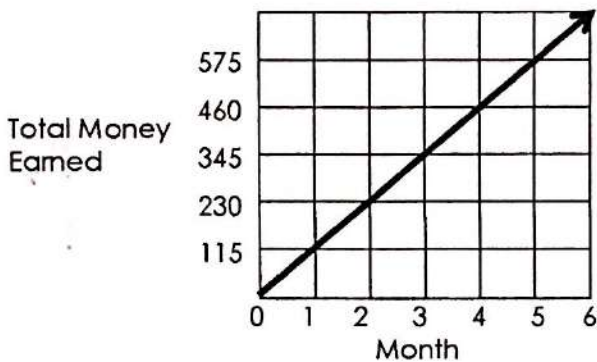
10. Which of the following graphs show the linear equation

$$y = -3x - 3$$





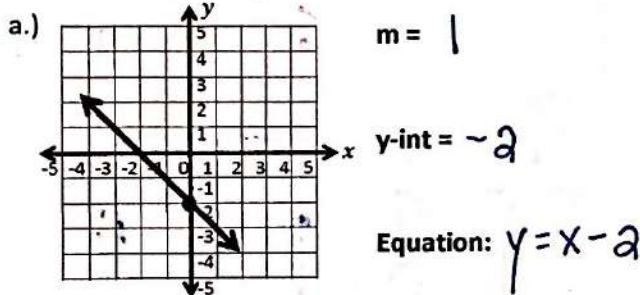
11. This graph shows the amount of money earned over 6 months.



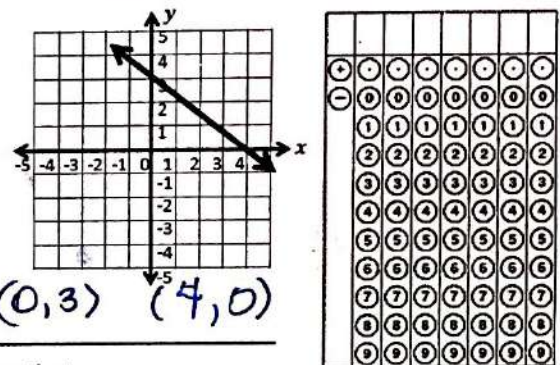
What does the slope of this graph represent?

- A. number of months
- B. total money earned
- C. months per total money earned
- ☒ D. total money earned per month

12. Find the slope and y-intercept of the following lines.



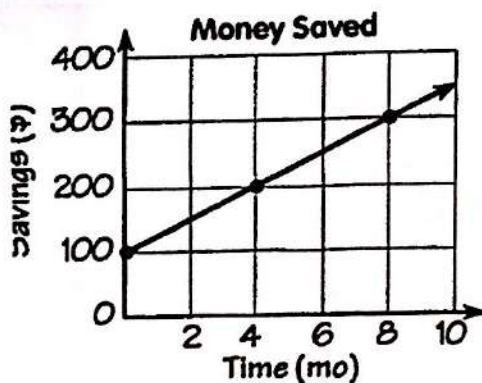
13. What is the zero of the function below?



14. Which of the following tables contains values for an equation that has a rate of change of  $-2$ ?

| A. | <table> <tr><th>x</th><th>Y</th></tr> <tr><td>-2</td><td>1</td></tr> <tr><td>0</td><td>3</td></tr> <tr><td>2</td><td>5</td></tr> <tr><td>4</td><td>7</td></tr> </table> | x | Y               | -2 | 1               | 0 | 3                | 2 | 5 | 4 | 7 | B. | <table> <tr><th>x</th><th>Y</th></tr> <tr><td>1</td><td>0</td></tr> <tr><td>2</td><td>4</td></tr> <tr><td>3</td><td>6</td></tr> <tr><td>4</td><td>8</td></tr> </table> | x | Y | 1 | 0 | 2 | 4 | 3 | 6 | 4 | 8 | C. | <table> <tr><th>x</th><th>Y</th></tr> <tr><td>-2</td><td>-3</td></tr> <tr><td>0</td><td>-4</td></tr> <tr><td>2</td><td>-5</td></tr> <tr><td>4</td><td>-6</td></tr> </table> | x | Y | -2 | -3 | 0 | -4 | 2 | -5 | 4 | -6 | D. | <table> <tr><th>x</th><th>Y</th></tr> <tr><td>1</td><td>-3</td></tr> <tr><td>2</td><td>-5</td></tr> <tr><td>3</td><td>-7</td></tr> <tr><td>4</td><td>-9</td></tr> </table> | x | Y | 1 | -3 | 2 | -5 | 3 | -7 | 4 | -9 |
|----|---|---|-----------------|----|-----------------|---|------------------|---|---|---|---|----|--|---|---|---|---|---|---|---|---|---|---|----|---|---|---|----|----|---|----|---|----|---|----|----|--|---|---|---|----|---|----|---|----|---|----|
| x  | Y   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| -2 | 1   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 0  | 3   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 2  | 5   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 4  | 7   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| x  | Y   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 1  | 0   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 2  | 4   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 3  | 6   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 4  | 8   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| x  | Y   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| -2 | -3  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 0  | -4  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 2  | -5  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 4  | -6  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| x  | Y   |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 1  | -3  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 2  | -5  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 3  | -7  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
| 4  | -9  |   |                 |    |                 |   |                  |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
|    | $2 < \dots > 2$   |   | $1 < \dots > 4$ |    | $2 < \dots > 1$ |   | $1 < \dots > -2$ |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |
|    | $= 1$   |   | $= 4$           |    | $= \frac{1}{2}$ |   | $= -2$           |   |   |   |   |    |  |   |   |   |   |   |   |   |   |   |   |    |   |   |   |    |    |   |    |   |    |   |    |    |  |   |   |   |    |   |    |   |    |   |    |

15. Kevin is saving money. He starts with \$100 and saves \$25 each month. The graph below shows the amount of money he has been able to save as a function of the number of months he has been saving.



What is the slope?  $\$25$

What does the slope represent? amt saved per month

What is the y-intercept? initial amt saved

What does the y-intercept represent?  $\$100$

Is the x-intercept useful for this situation? Why or why not?

no because it would be a negative amt and the question is about saving not spending.

16. Identify the slope and y-intercept of:  $y = -5x$

Slope -5 y-intercept 0

17. the equation is slope intercept form:  
 $y = 2x + 4$  identify slope and y-intercept.

Slope 2  
 y-intercept 4

18. the equation is slope intercept form:  
 $y = \frac{3}{2}x + 1$  identify slope and y-intercept.

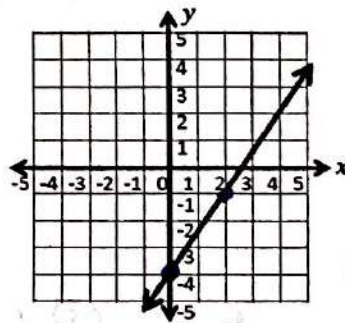
Slope  $\frac{3}{2}$   
 y-intercept 1

19. Given the graph below, identify the following:  
 linear equation:

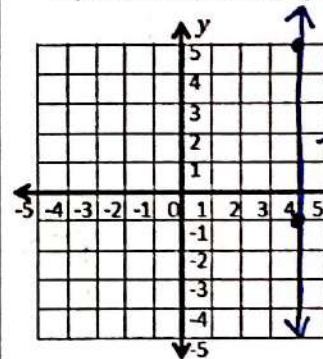
Slope  $\frac{3}{2}$   
 y-int: -4

Equation of the line:

$$y = \frac{3}{2}x - 4$$



20. Graph the line that passes through the given points. Then identify the slope, intercepts, and equation of the line. (5, -1) and (5, 5)



$m =$  undefined

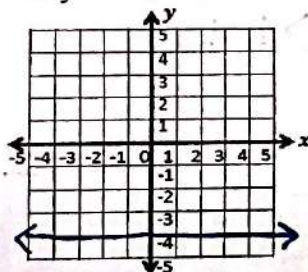
y-int =

x-int = 5

Equation:  $x = 5$

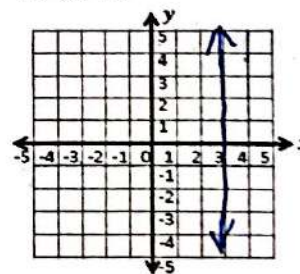
21. Graph the following equations and identify the slope, the y-int if it has one, and the x-int if it has one:

a.  $y = -4$



Slope 0  
 y-intercept -4  
 x-intercept

b.  $x = 3$



Slope undefined  
 y-intercept  
 x-intercept 3

22. Which of the following is the graph of:  $y = -2x + 4$ ?

