

1. What is the solution to $-5(4 + 6m) = -5(-4 + 2m)$?

- A. -12
- B. -2**
- C. 8
- D. -6

$$\begin{aligned} -20 - 30m &= 20 - 10m \\ +20 & \quad +20 \\ -30m &= 40 - 10m \\ +10m & \quad +10m \\ -20m &= 40 \\ \frac{-20m}{-20} &= \frac{40}{-20} \\ \boxed{m = -2} \end{aligned}$$

2. What is the solution to $-8(2x + 6) - 3x = 2(6 - 7x)$?

- A. -7
- B. -15
- C. -12**
- D. 2

$$\begin{aligned} -16x - 48 - 3x &= 12 - 14x \\ -14x - 48 &= 12 - 14x \\ +14x + 48 & \quad +48 + 14x \\ -5x &= 60 \\ \frac{-5x}{-5} &= \frac{60}{-5} \\ \boxed{x = -12} \end{aligned}$$

3. What is the solution to $-0.3(1.4x + 1.1) = 1.8 - 0.6(1 + 1.2x)$?

- A. -6.1
- B. 5.1**
- C. -4.8
- D. 6.9

$$\begin{aligned} -.42x - .33 &= 1.8 - .6 - .72x \\ -.42x - .33 &= 1.2 - .72x \\ +.72 + .33 & \quad +.33 + .72x \\ -.3x &= 1.53 \\ \frac{-.3x}{-.3} &= \frac{1.53}{-.3} \\ \boxed{x = 5.1} \end{aligned}$$

4. What is the solution to $1.5(0.5 - 0.4x) = -0.3(3.5x + 2.9)$?

- A. -5.2
- B. -7.7
- C. -7.6
- D. -3.6**

$$\begin{aligned} .75 - .6x &= -1.05x - .87 \\ -.75 + 1.05x + 1.05x & \quad -.75 \\ .45x &= -1.62 \\ \frac{.45x}{.45} &= \frac{-1.62}{.45} \\ \boxed{x = -3.6} \end{aligned}$$

5. The table below shows the median California family income from 1995 to 2002 as reported by the US Census Bureau. Find an equation for the line of best fit to represent this data.

16. The following table shows the median California family income from 1995 to 2002 as reported by the US Census Bureau.

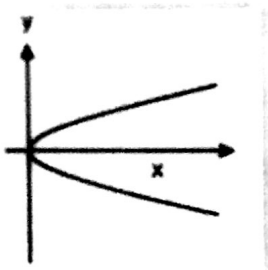
Year	Income
1995	53,807
1996	55,217
1997	55,209
1998	55,415
1999	63,100
2000	63,206
2001	63,761
2002	65,766

x	y
1	53,807
2	55,217
3	55,209
4	55,415
5	63,100
6	63,206
7	63,761
8	65,766

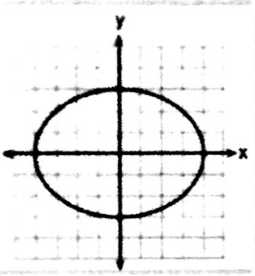
- List / Spreadsheets
- Data Statistics

$$\boxed{y = 1882.25x + 50965}$$

6. Which relation below represents y as a function of x?



A.



B.

C.

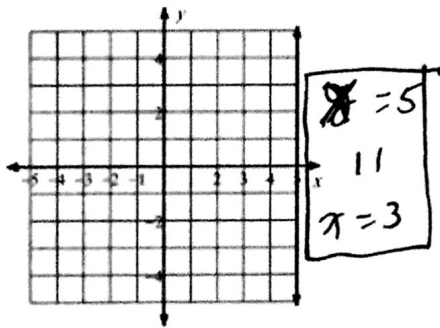
X	Y
-2	12
0	6
2	0
4	6
6	12

D.

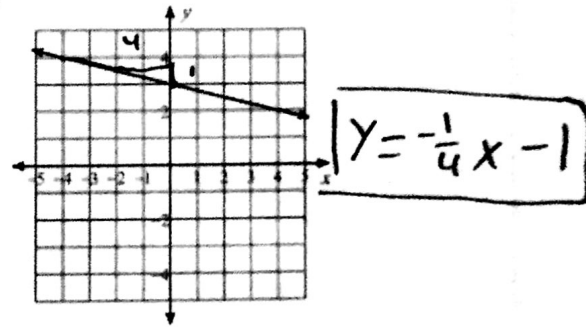
X	Y
12	-2
6	0
0	2
6	4
12	6

Write the equation of the line parallel to the graph that passes through the point (0,-1)

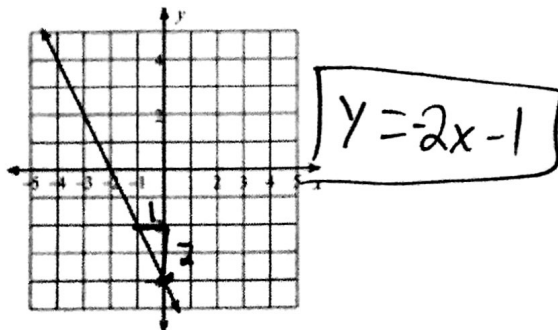
1)



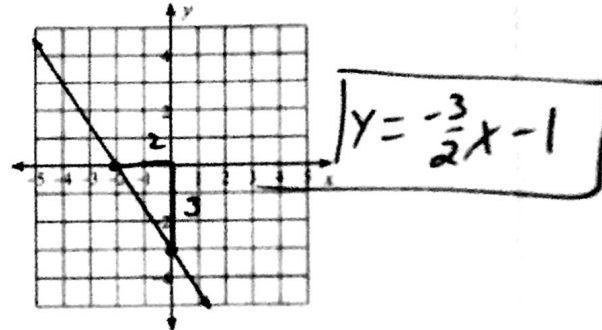
2)



3)



4)



7.

Write the standard form of the equation of the line through the given point with the given slope.

5) through: $(-3, -2)$, slope = 1

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

$$y + 2 = x + 3$$

$$\boxed{y = x + 1}$$

6) through: $(0, 3)$, slope = undefined

$$\boxed{x = 0}$$

7) through: $(5, 5)$, slope = 0

8) through: $(-4, 1)$, slope = $-\frac{5}{4}$

8.

$$y - 5 = 0(x - 5)$$

$$y - 5 = 0$$

$$\boxed{y = 5}$$

$$y - 1 = -\frac{5}{4}(x + 4)$$

$$y - 1 = -\frac{5}{4}x - 5$$

$$\boxed{y = -\frac{5}{4}x - 4}$$

The student council sent its members on four field trips during the school year. The number of buses needed to transport the members on each trip is a function of the number of members who went on each trip. This function consists of only the ordered pairs $(52, 3)$, $(72, 4)$, $(86, 5)$, and $(105, 6)$. What is the domain for this situation?

F $\{52, 105\}$

G $\{3, 4, 5, 6\}$

H $\{52, 72, 86, 105\}$

J $\{3, 4, 5, 6, 52, 72, 86, 105\}$

9.

A man bought x boxes of doughnuts for \$3.49 each. He paid with a \$50 bill and received the correct amount of change. If he received more than \$10 but less than \$20, which inequality represents the number of boxes of doughnuts he could have bought?

F $9 \leq x \leq 11$

G $8 \leq x \leq 12$

H $8 \leq x \leq 11$

J $9 \leq x \leq 12$

$$\begin{array}{r} 3.49 \\ \times 9 \\ \hline 31.41 \end{array}$$

$$\begin{array}{r} 3.49 \\ \times 8 \\ \hline 27.92 \end{array}$$

$$\begin{array}{r} 3.49 \\ \times 11 \\ \hline 38.39 \end{array}$$

$$\begin{array}{r} 3.49 \\ \times 12 \\ \hline 41.88 \end{array}$$

Too little

Too much

10.

11. Eric earns \$7.50 per hour working at a grocery store. The total amount of money he earns on a given day is a function of how many hours he works that day.

If he typically works between one and five hours each day, which is the reasonable range for this function?

A { \$3.25, \$10.75, \$18.75, \$25.75, \$33.25 }

B { \$3.25, \$10.75, \$18.75, \$25.75, \$33.25, \$40.75 }

C { \$7.50, \$15.00, \$22.50, \$30.00, \$37.50 }

D { \$7.50, \$15.00, \$22.50, \$30.00, \$37.50, \$45.00 }

12. Let $f(s) = 3s$ where s represents the speed in miles per hour of a car and $f(s)$ represents the total distance traveled.

If the car's maximum speed is 75 mph, what is a reasonable range for the function?

F $0 \leq y \leq 75$

G $0 \leq y \leq 225$

H $y \leq 75$

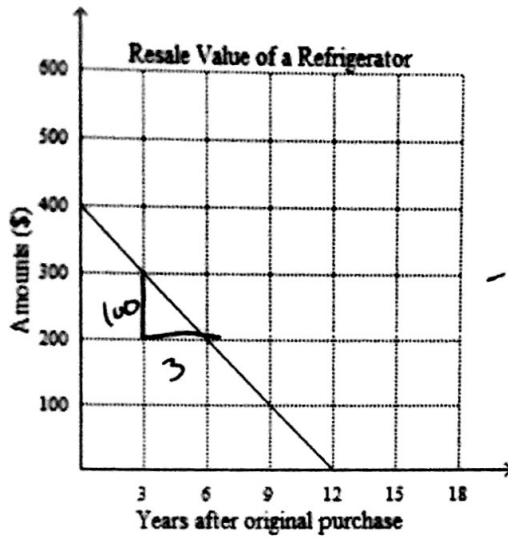
J $y \geq 0$

$$f(x) = 3(75)$$

$$f(x) = 225$$

$$0 < y < 225$$

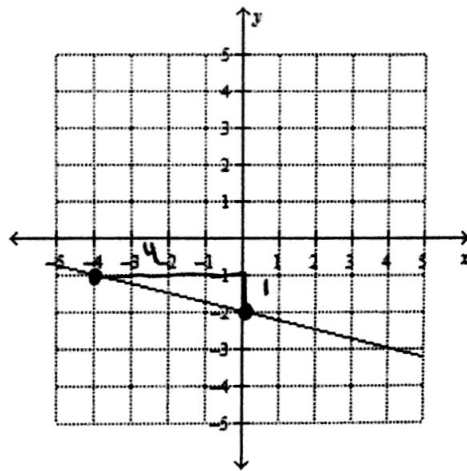
13. The rate of change is constant in the graph. Find the rate of change. Explain what the rate of change means for the situation.



$-\frac{100}{3} = \text{slope}$

- a. -100 ; value drops \$100 every year.
- b.** $-\frac{100}{3}$; value drops \$100 every 3 years.
- c. -3 ; value drops \$3 every year.
- d. -1 ; value drops \$1 every year.

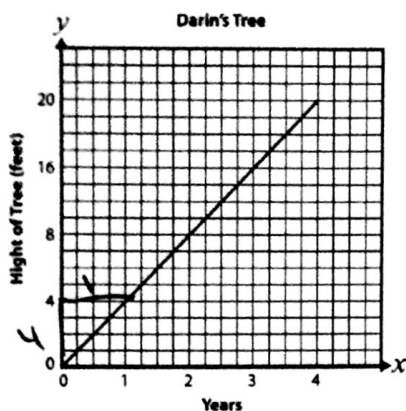
14. Find the slope of the line.



$\frac{\text{rise}}{\text{run}}$

- a.** $-\frac{1}{4}$
- b. $\frac{1}{4}$
- c. -4
- d. 4

15. For four consecutive years, Darin recorded the height of a tree he planted. He plotted the height of the tree at the same time every summer and drew a line connecting the previous years data point to the new data point, as shown on the graph below.



$$\frac{4 \text{ feet}}{1 \text{ yr}} = \frac{\text{rise}}{\text{run}}$$

Which of the following is a correct interpretation of the rate of change of the tree's growth?

- F The tree grew 1 foot in four years. G The tree grew 1.5 feet in six years.
 H The tree grew 2 feet in six months. J The tree grew 4 feet in six months.

Find the slope and y-intercept of the line.

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

a. $3; \frac{4}{3}$

b. $-3; \frac{4}{3}$

c. $\frac{3}{4}; 3$

d. $\frac{4}{3}; -3$

$$14x + 4y = 24$$

a. $-\frac{2}{7}; 6$

c. $\frac{7}{2}; \frac{1}{6}$

b. $-\frac{7}{2}; 6$

d. $\frac{7}{2}; -6$

16.

$$\begin{array}{r} 14x + 4y = 24 \\ -14x \qquad -14x \\ \hline 4y = -14x + 24 \\ \frac{4y}{4} = \frac{-14x + 24}{4} \end{array}$$

$$y = -\frac{7}{2}x + 6$$

Write an equation in point-slope form for the line through the given point with the given slope.

$(4, -6); m = \frac{3}{5}$

a. $y + 6 = \frac{3}{5}x - 4$

c. $y + 6 = \frac{3}{5}(x - 4)$

b. $y - 6 = \frac{3}{5}(x + 4)$

d. $y - 4 = \frac{3}{5}(x + 6)$

$(10, -9); m = -2$

a. $y - 10 = -2(x + 9)$

c. $y - 9 = -2(x - 10)$

b. $y - 9 = -2(x + 10)$

d. $y + 9 = -2(x - 10)$

17.

18. Mike bought a soft drink for 4 dollars and 9 candy bars. Write a function that models the total cost after purchasing x candy bars.

$$y = 9x + 4$$

y - total
 x - price per bar

19. Wendell's Motor Rentals is advertising a rate of \$35 a day plus \$0.20 per mile traveled, tax included.

Write a function that describes the cost of driving x miles.

$$y = .2x + 35$$

y = cost
 x = miles

20. Marina's Car Rentals is advertising a rate of \$25 a day plus \$0.40 per mile traveled, tax included. Write a function that describes the cost of driving x miles.

$$y = .40x + 25$$

y = cost
 x = mile

21. Nancy joined a health club for the summer. There is a \$20 fee to join and then a \$15 charge per month. Write a function that represents the relationship between time in months, t , and total cost, c .

$$c = 15t + 20$$

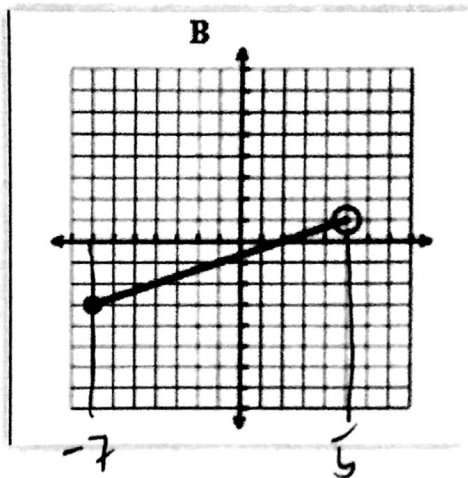
t = month

c = total

Name: _____

22. What is the domain of the graph below?

- A. $-7 \leq x < 5$
- B. $-3 \leq x < 1$
- C. $-3 < y < 1$
- D. $-7 < y < 5$



23. Which equation is perpendicular to $y = \frac{2}{5}x + 4$?

- a. $y = \frac{5}{2}x + 6$
- b. $y = -\frac{2}{5}x - 2$
- c. $y = \frac{2}{5}x - 7$
- d. $y = -\frac{5}{2}x + 12$

Handwritten work for Q23: $\frac{L1}{2/5} \perp \frac{L2}{-5/2}$

24. Which equation is parallel to $y = \frac{2}{5}x + 4$?

- a. $y = \frac{5}{2}x + 6$
- b. $y = -\frac{2}{5}x - 2$
- c. $y = \frac{2}{5}x - 7$
- d. $y = -\frac{5}{2}x + 12$

Handwritten work for Q24: $\frac{L1}{2/5} \parallel \frac{L2}{2/5}$

25. Find the zero of the following function: $y = \frac{2}{3}x + 8$

- a. -12
- b. -24
- c. 8
- d. $\frac{2}{3}$

Handwritten work for Q25: $0 = \frac{2}{3}x + 8 \Rightarrow (3) - 8 = \frac{2}{3}x(3) \Rightarrow \frac{-24}{3} = \frac{2x}{1} \Rightarrow x = -12$

26. Find the slope of the line that contains the points (3, -4) and (12, 23)

- a. $\frac{19}{9}$
- b. 3
- c. $\frac{1}{3}$
- d. -3

Handwritten work for Q26: $\frac{23 - (-4)}{12 - 3} = \frac{27}{9} = 3$

27. Given that the slope of a line is $\frac{2}{3}$ and the line passes through (6, 7) and (12, y), find the missing value.

- a. 9
- b. -3
- c. 11
- d. -1

Handwritten work for Q27: $\frac{y - 7}{12 - 6} = \frac{2}{3} \Rightarrow \frac{y - 7}{6} = \frac{2}{3} \Rightarrow y - 7 = 4 \Rightarrow y = 11$

Handwritten answer for Q27: $y = 11$