Graphing and Interpreting Linear and Non-Linear Relations

1. What is the domain and range of the relation shown in the table below?

x	y
-1	-5
1	-1
3	3
5	7

Domain_____

Range_____

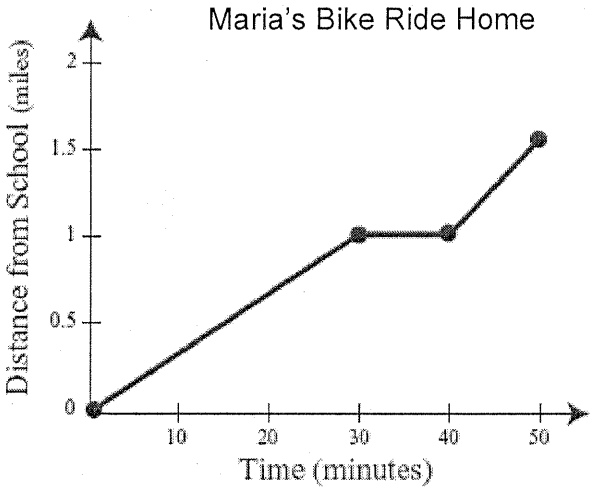
Is the relation in the table above a function?

Answer_____

2. Which relation below is NOT a function?

   A. { (-2, 4), (1, 3), (0, 4) }
   B. { (5, 5), (4, 4), (3,3) }
   C. { (-4, 0), (-7, 0), (11, 0) }
   D. { (1, 4), (2, 5) (1, 7) }

3. Maria rode her bike home from school. The graph below shows Maria's distance from school over time.



Describe Maria's bike ride home with respect to time and distance. Be sure to include any changes in speed during the bike ride.

4. Which equation has a graph with no y-intercept?

   A. $y = 5$
   B. $x = 1$
   C. $x = y$
   D. $y = -x$

5. What is the slope, x-intercept, and y-intercept of the graph of $3x + y = 7$?

slope = _____ **x-intercept =** _____ **y-intercept =** _____

6. What is the y-intercept of the graph of $-2y = x - 4$?

   A. -4
   B. -2
   C. 2
   D. 4

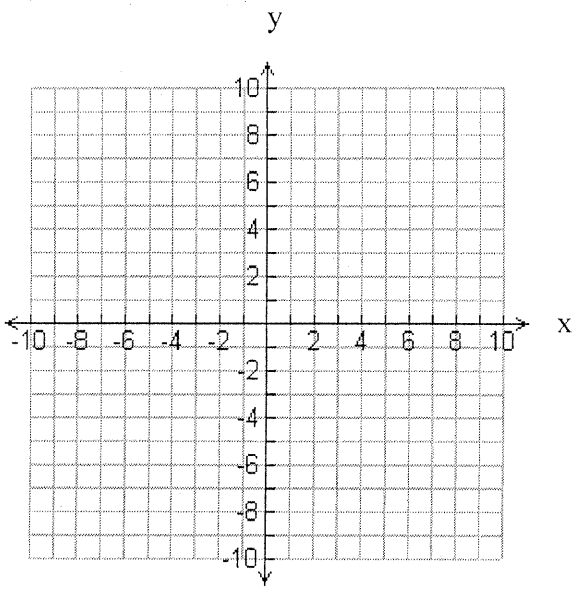
7. Which of the following is an equation of a line with a slope of -2 that passes through the point (-4, 3)?

   A. $y = -2x - 5$
   B. $y = -2x - 4$
   C. $y = -2x + 3$
   D. $y = -2x + 11$

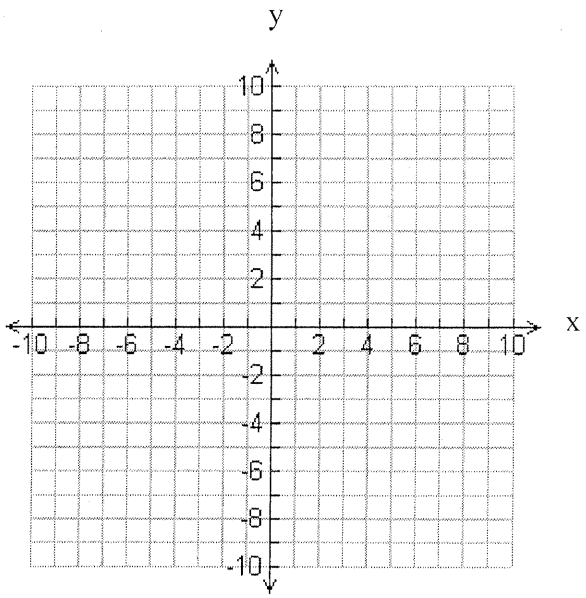
8. Write an equation of a line that passes through the points (-2, 5) and (1, 2).

Answer_____

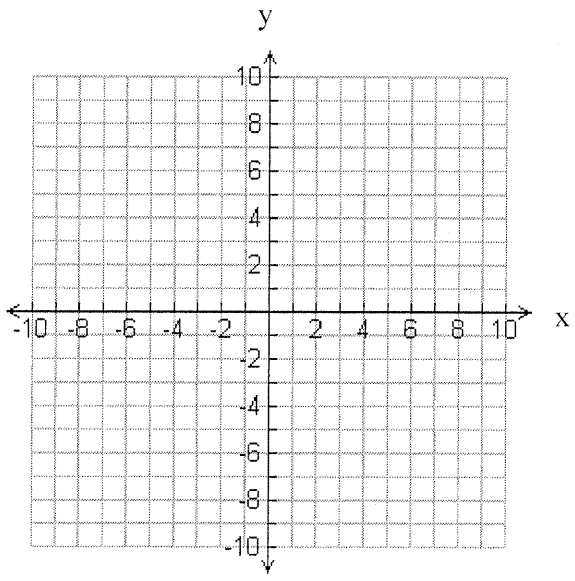
9. Graph: $y = \frac{2}{3}x - 1$



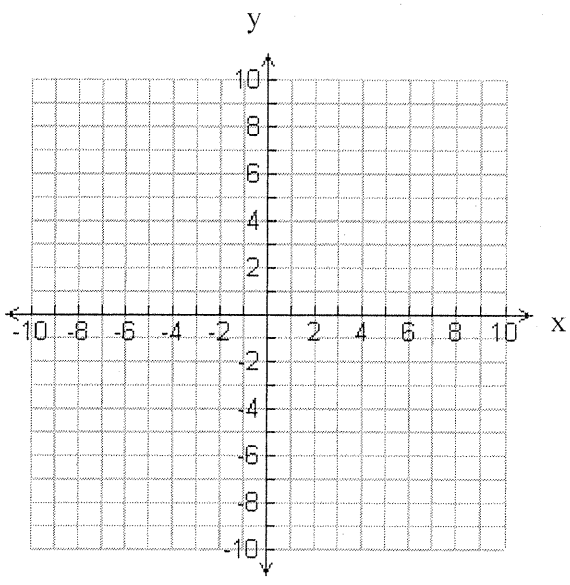
10. Graph: $6x - 2y = 10$



11. Graph: $y \leq \frac{-1}{3}x + 4$



12. Graph: $-5y < 10x$



13. Sue earns \$2 for each CD she sells and \$2.50 for each DVD she sells. Sue earned \$950 last week selling CDs and DVDs.

Write an equation to represent the number of CDs (c) and DVDs (d) Sue sold last week given that she earned \$950.

Answer_____

If Sue sold 305 CDs last week, how many DVDs did she sell?

Answer_____

14. Wes bought a pizza with 2 toppings from Bill's Pizza Place for \$11.00. Lisa bought a pizza with 5 toppings from Bill's Pizza Place for \$14.75.

Each topping at Bill's Pizza Place costs the same amount.

What is the price per topping at Bill's Pizza Place?

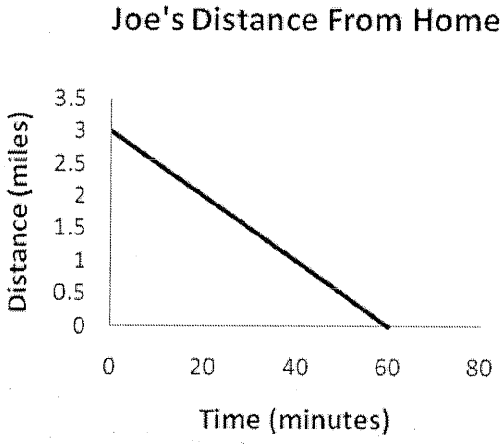
Answer_____

Write an equation that can be used to determine the cost (C), in dollars, of a pizza at Bill's Pizza Place given the number of toppings (T).

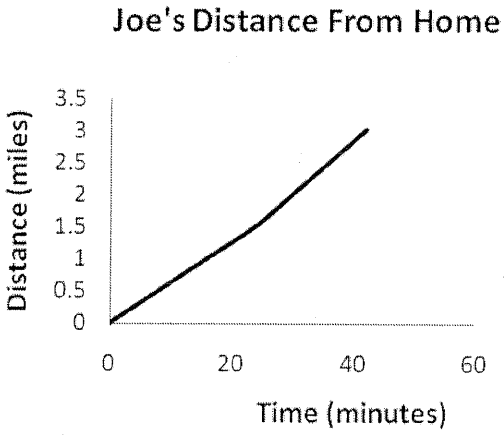
Answer_____

15. Joe ran from his home to school at a constant speed. He immediately turned around and ran back home, but at a slower constant speed. Joe ran along a straight path to and from school. Which graph best represents Joe's distance from his home over time?

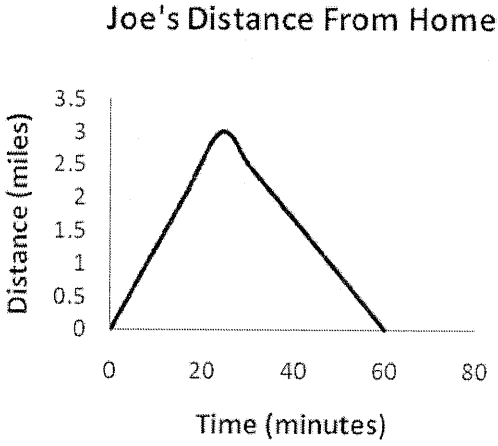
A.



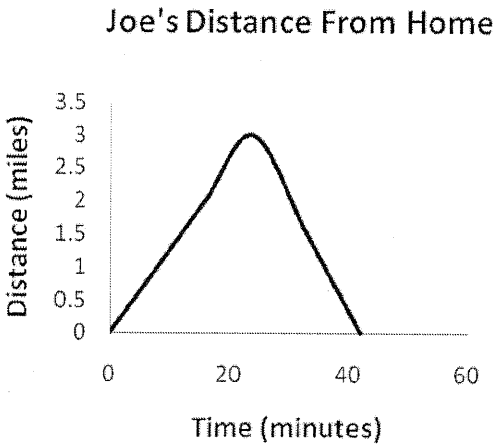
B.



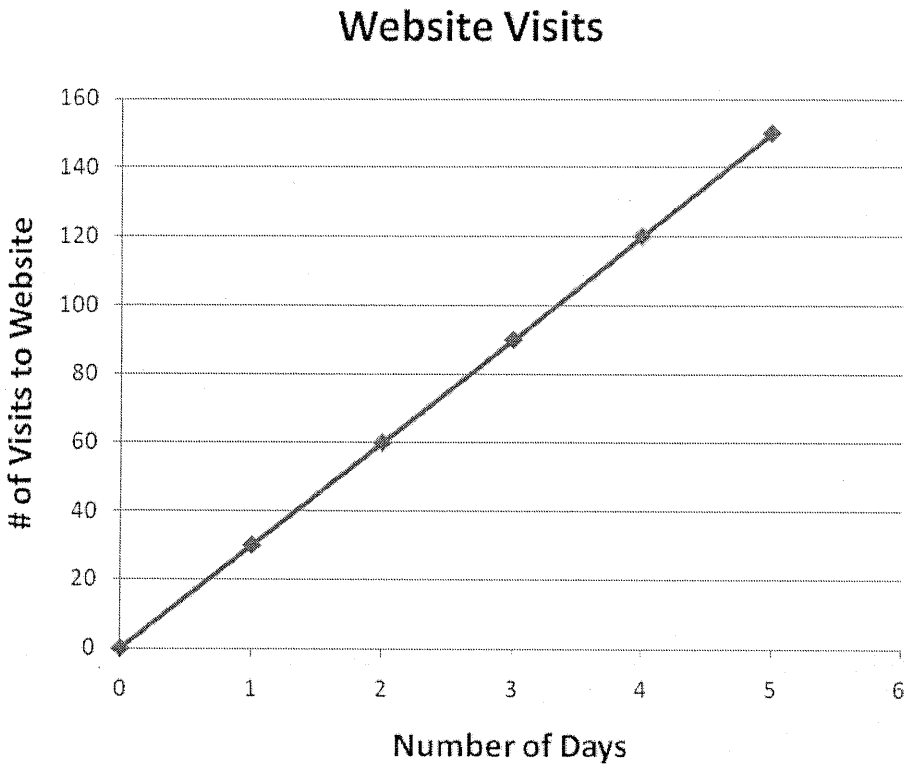
C.



D.



16. The graph below represents the total number of times a certain website was visited over a 5-day period.



What is the slope of this line segment and what does it represent in terms of this situation?

Write an equation that represents the total number of times this website is visited, V, after d days.

Answer_____

If this trend continues, how many times will this website be visited in 30 days?

Answer_____