

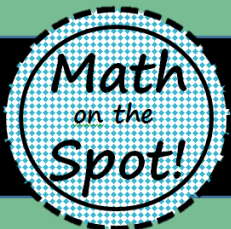
STAAR Algebra 1 EOC

Reporting
Category **2**

Assessment Items

*Includes 25 Multiple Choice and
1 Open Ended Questions*

- Calculating the Rate of Change/Slope
- Graphing Linear Equations and Identifying Key Features
- Graphing Linear Inequalities in Two Variables
- Linear Transformations
- Graphing Linear Systems of Equations and Inequalities on the Coordinate Plane
- Estimating the Solutions to Linear Systems of Equations
- Identifying and Describing the Correlation Coefficient
- Writing Linear Functions to Fit Data

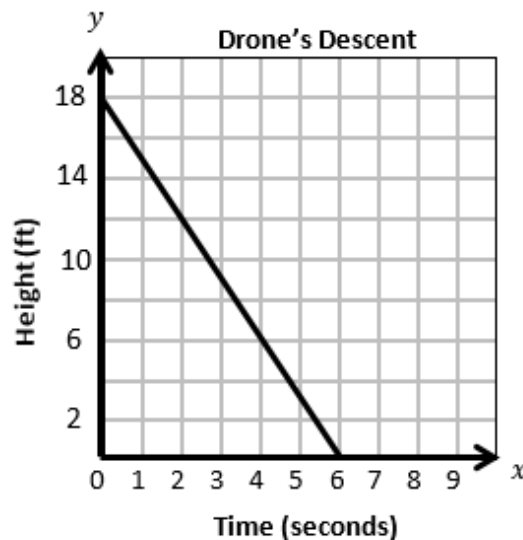


Algebra 1

3. A saving's account began with a balance of \$250. The relationship between the number of deposits, x , and the balance in the account, y , is represented by the equation $75x - y = -250$. What is the rate of change of the balance with respect to the number of deposits?

- A \$50 per deposit
- B \$75 per deposit
- C \$175 per deposit
- D \$250 per deposit

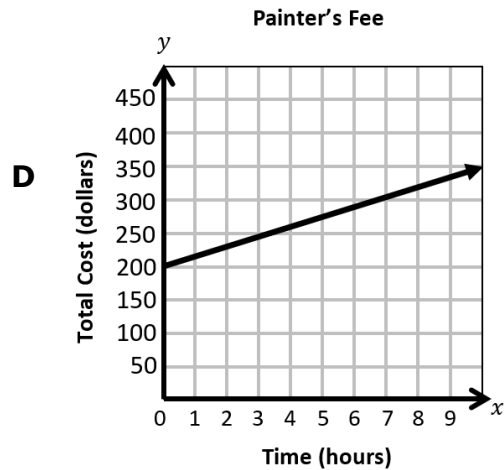
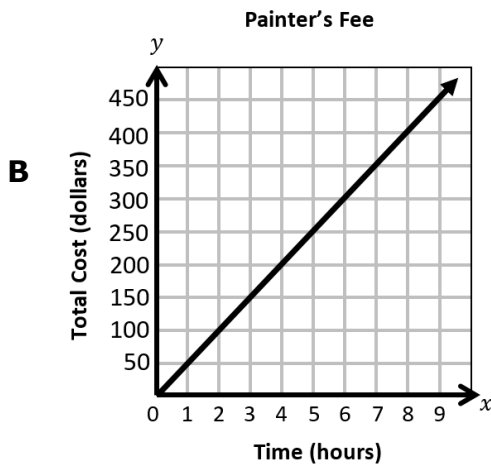
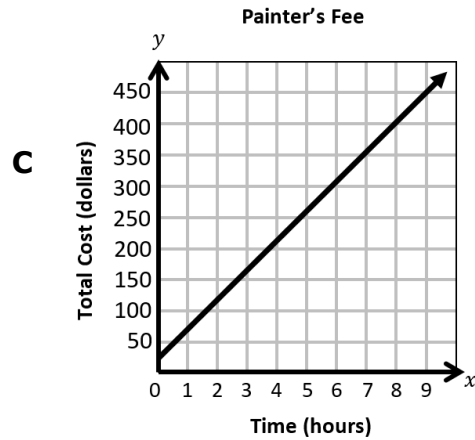
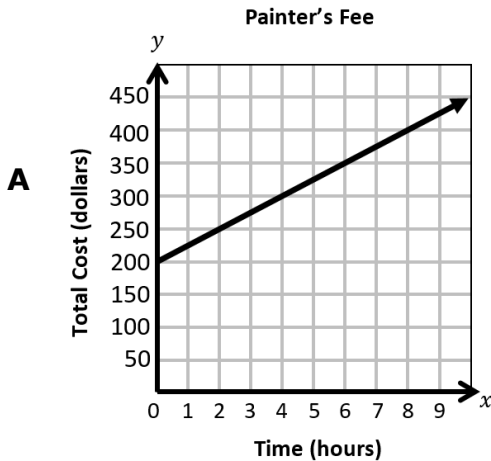
4. A drone's descent to the ground can be modeled by the graph of the linear function shown on the grid.



Which of these best represents the rate of change in the height of the drone with respect to the time?

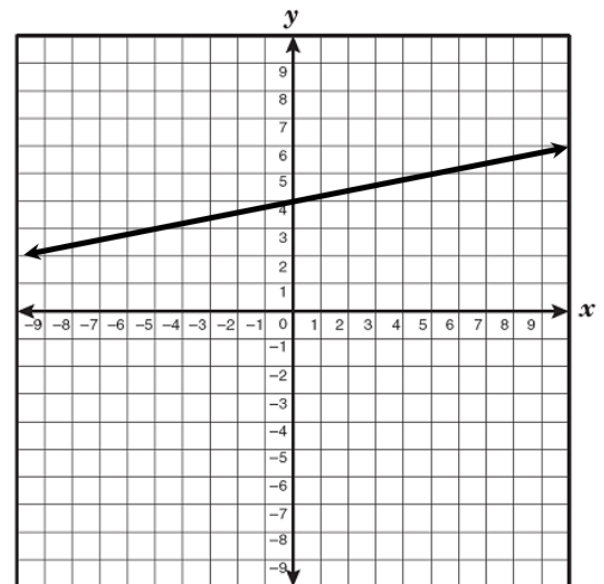
- A -1.5 feet per second
- B -3 feet per second
- C -4 feet per second
- D -2 feet per second

5. The total cost a painter charges to paint a house can be modeled by the equation $25x - y = -200$. If x represents the number of hours it takes to paint the house and y represents the total cost, which graph best models this situation?

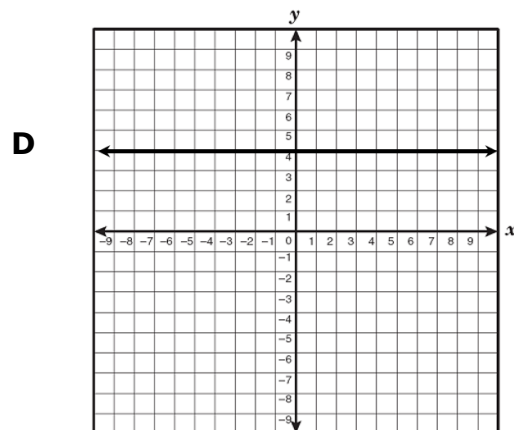
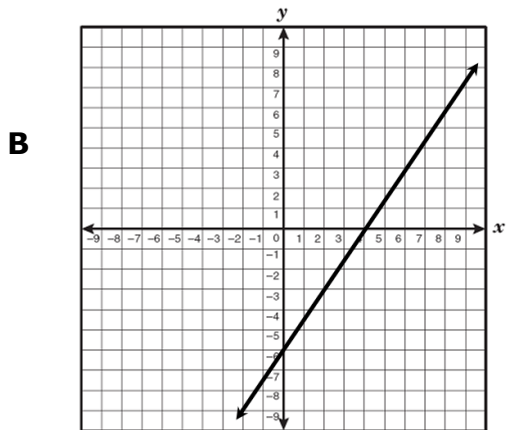
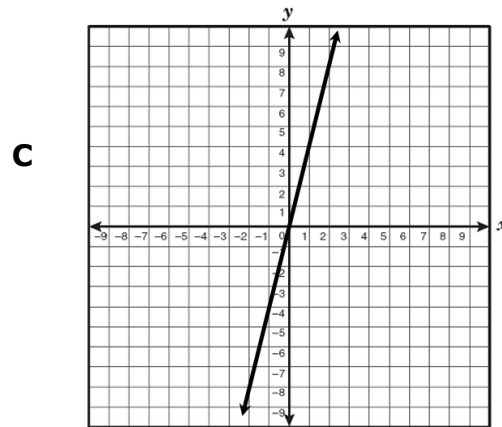
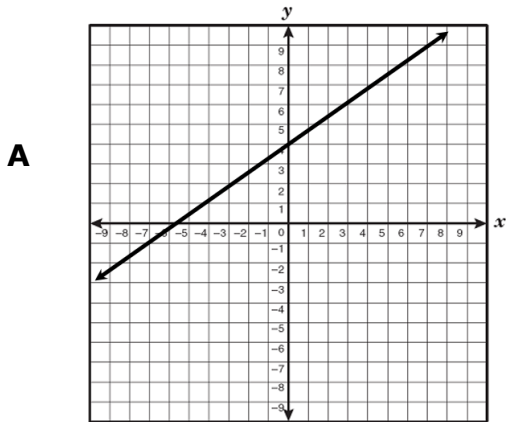


6. What is the slope of the linear function graphed below?

- A** 0.5
- B** 2
- C** 5
- D** 0.2



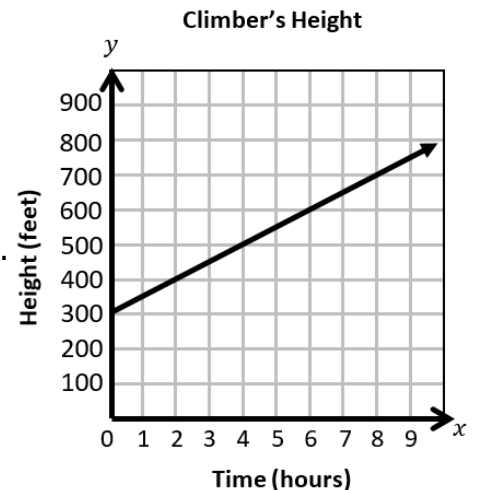
7. Which graph shows a linear function with a zero of 4?



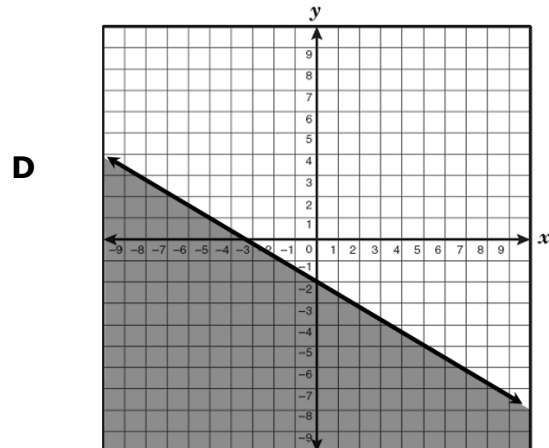
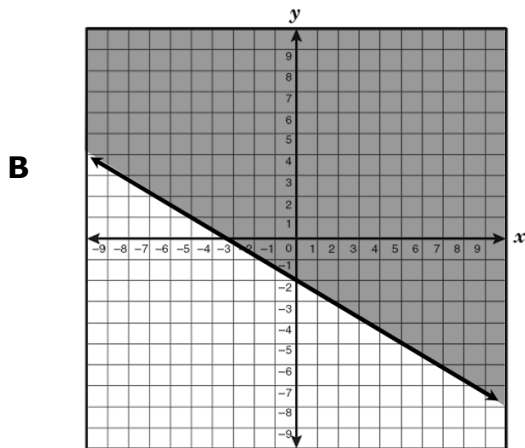
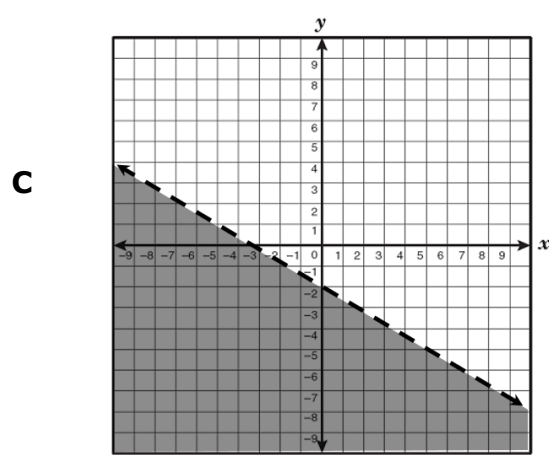
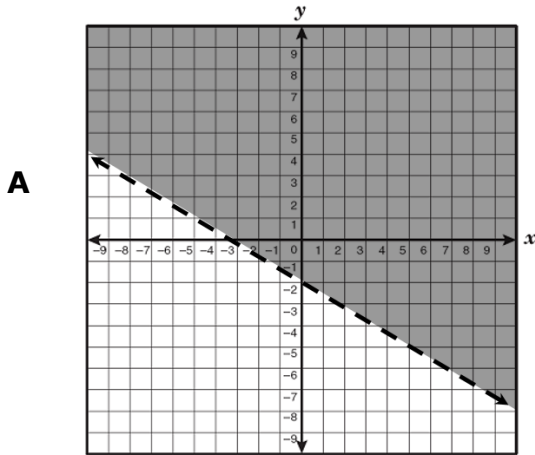
8. The graph shows the relationship between the height of a mountain climber and the total number of hours spent climbing.

What does the y -intercept of the graph represent?

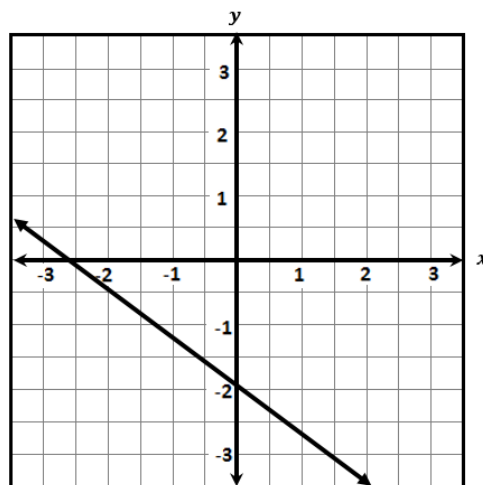
- A** The total number of hours the mountain climber has climbed.
- B** The initial height of the mountain climber.
- C** The total number of feet the mountain climber has climbed.
- D** The rate at which the mountain climber is climbing at.



9. Which graph represents the solution set of $3x + 5y > -10$?



10. The graph of $0.75x + y = -2$ is shown on the grid.



Which ordered pair is in the solution set of $0.75x + y > -2$?

A (-1.5, -2)

C (0, -2)

B (1.5, -3.5)

D (1.5, 1)

11. What is the slope of the line $2x + 7y = -21$?

A $-\frac{7}{2}$

B $\frac{7}{2}$

C $-\frac{2}{7}$

D $\frac{2}{7}$

12. What is the slope of a line that passes through the points (3, -10.5) and (7, -28.5)?

A $-\frac{2}{9}$

B $-\frac{9}{2}$

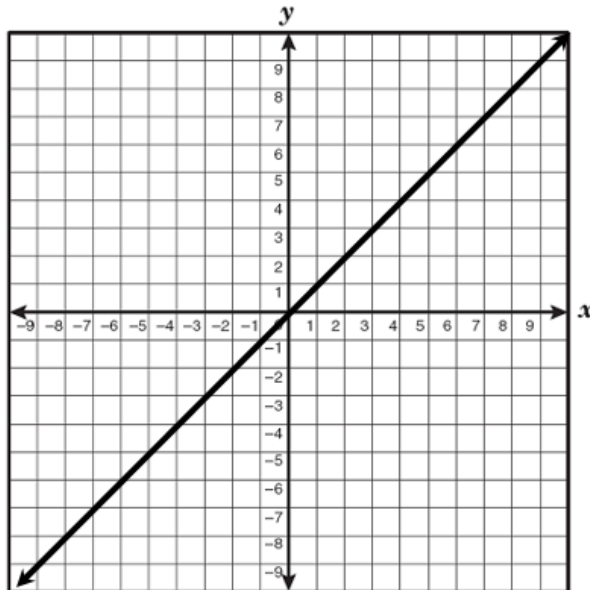
C $\frac{2}{9}$

D $\frac{9}{2}$

13. Linear functions r and s are graphed on the same coordinate grid. The y -intercept of the graph of r is 7 units above the y -intercept of the graph of s . Which pair of functions could be used to create the graphs of r and s ?

- A $r(x) = 7x$ and $s(x) = x$
- B $r(x) = x - 7$ and $s(x) = x$
- C $r(x) = x + 7$ and $s(x) = x$
- D $r(x) = -7x$ and $s(x) = x$

14. The graph of $f(x) = x$ is shown on the grid.



Which statement about the relationship between the graph of f and the graph of $g(x) = 2x$ is true?

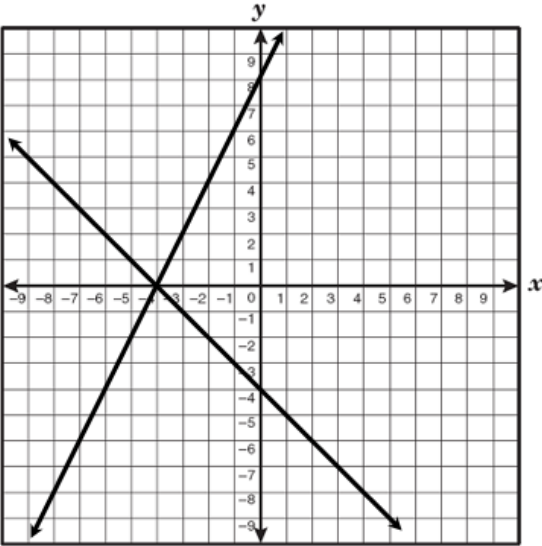
- A The graph of g is steeper than the graph of f .
- B The graph of g is not as steep as the graph of f .
- C The x -intercept of the graph of g is 2 units to the right of the x -intercept of the graph of f .
- D The x -intercept of the graph of g is 2 units to the left of the x -intercept of the graph of f .

15. Which graph can be used to find the solution to the system of equations below?

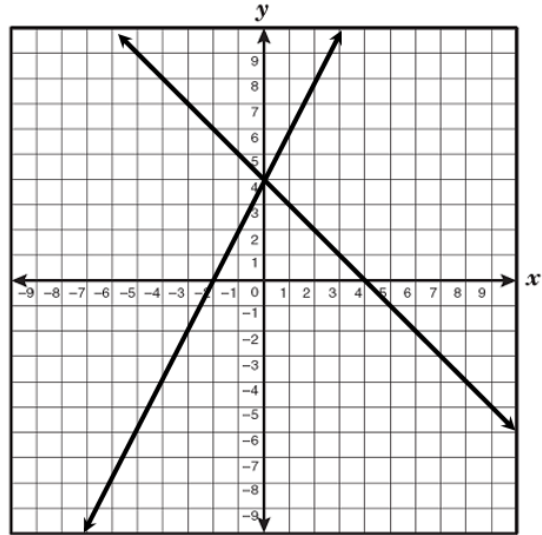
$$y = -x + 4$$

$$y = 2x - 8$$

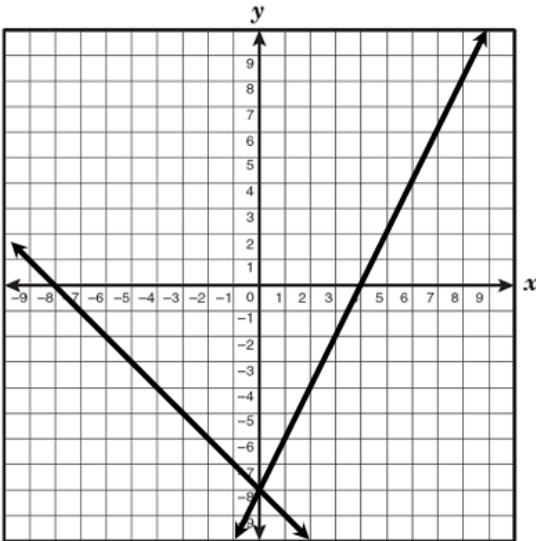
A



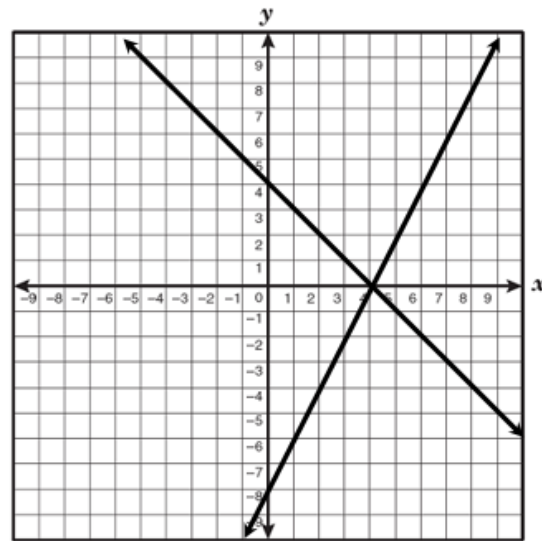
C



B



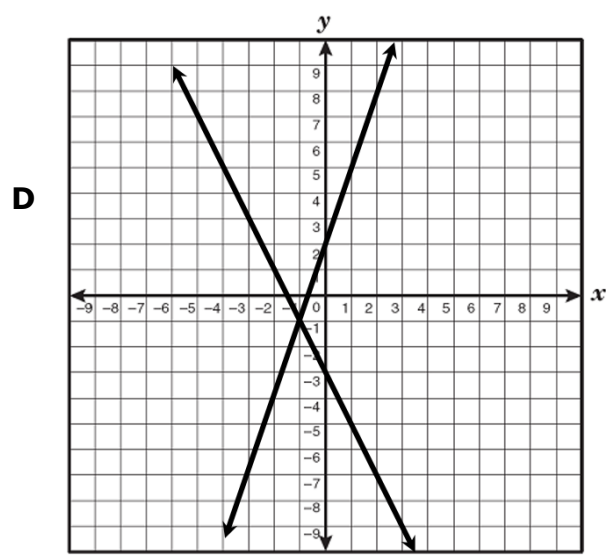
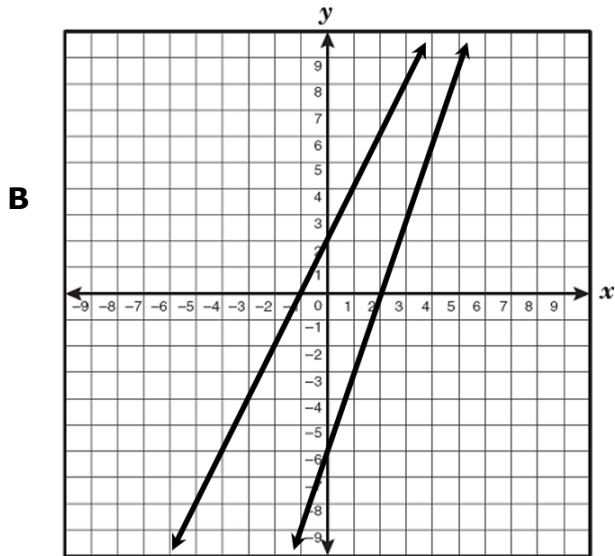
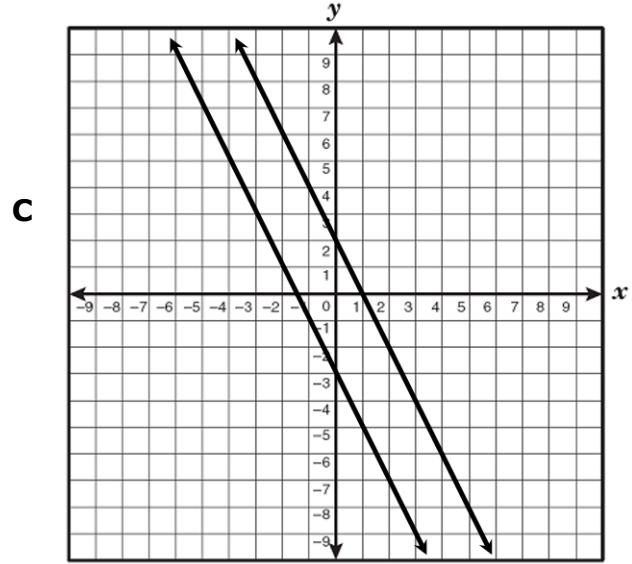
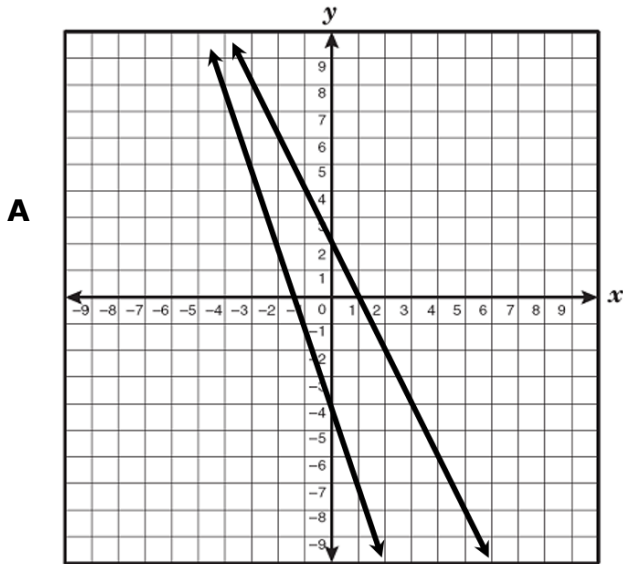
D



16. Which graph can be used to find the solution to the system of equations below?

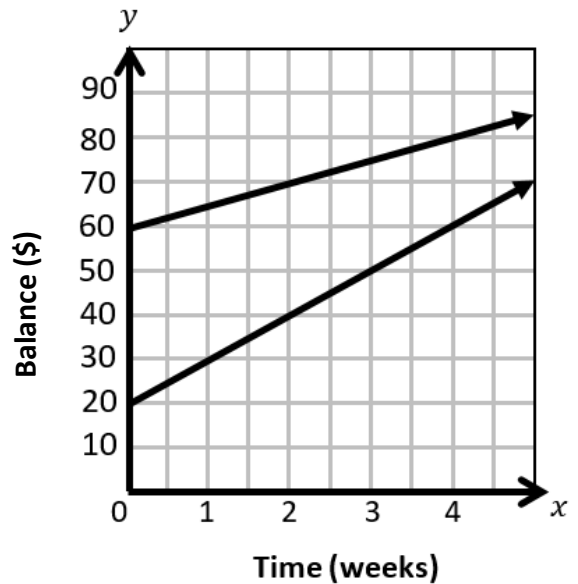
$$2x + y = 2$$

$$4x + 2y = -6$$



17. The graph shows the balances in two bank accounts over time.

Account Balances

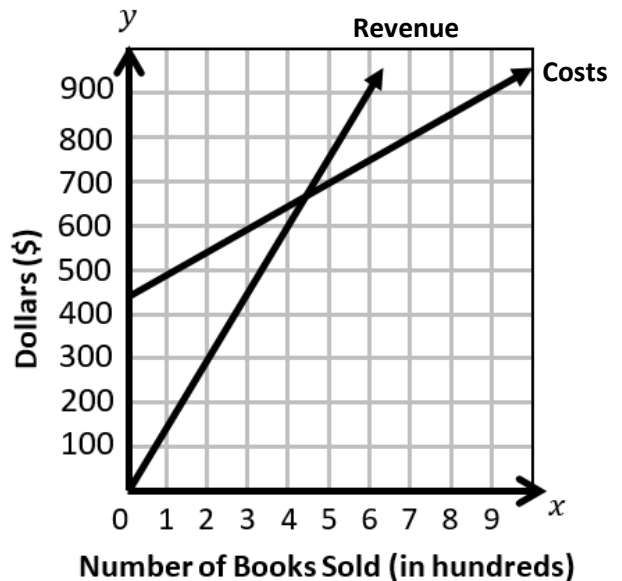


Which is closest to the time in which both accounts will have the same balance?

- A 10 weeks
- B 8 weeks
- C 6 weeks
- D 5 weeks

18. A publisher sells puzzle books. The publisher has fixed costs of \$450, and each puzzle book costs an additional \$0.50 to make. The publisher sells each book for \$1.50. The graph of the system of linear equations representing the publisher’s costs and revenue for manufacturing and selling x puzzle books is shown below.

Sales of Puzzle Books



Which is closest to the number of books that this publisher will need to sell in order for costs and revenue to be equal?

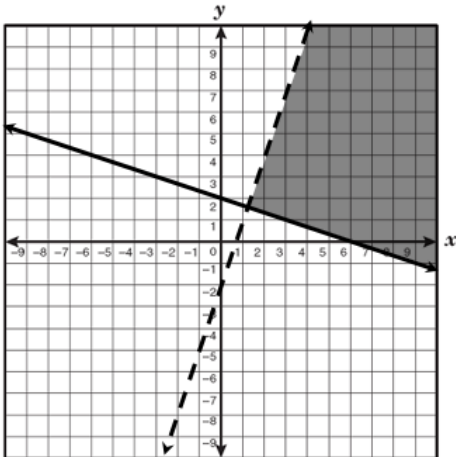
- A 1,000
- B 700
- C 675
- D 450

19. Which graph can be used to find the solution to the system of inequalities below?

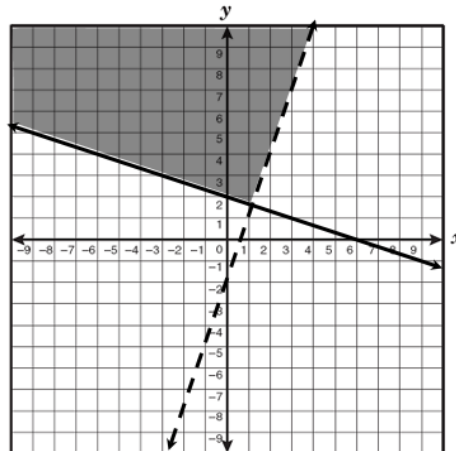
$$y > 3x - 2$$

$$y \geq -\frac{1}{3}x + 2$$

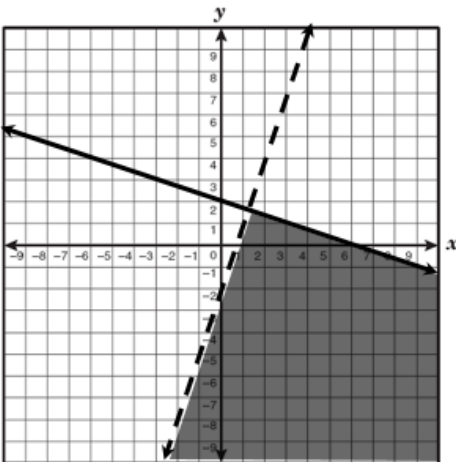
A



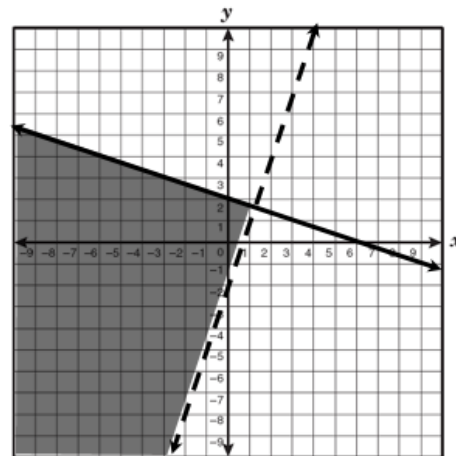
C



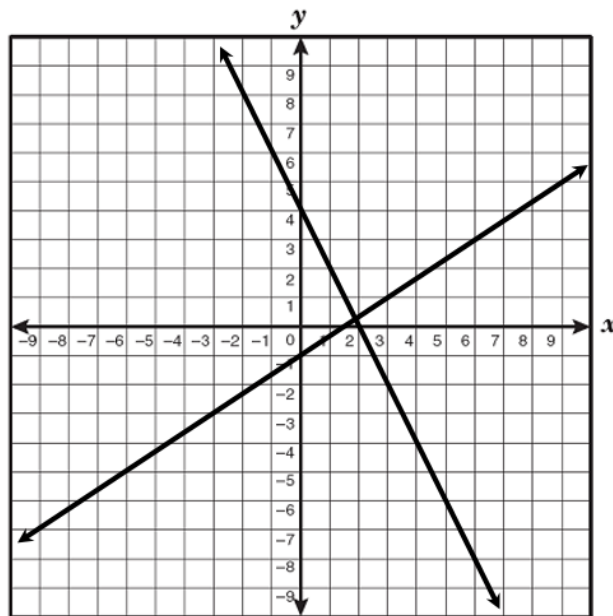
B



D



20. The graph of the linear system $y = -2x + 4$ and $y = \frac{2}{3}x - 1$ is shown on the grid.



Which ordered pair is in the solution set of the system of inequalities below?

$$y < -2x + 4$$

$$y > \frac{2}{3}x - 1$$

- A (2, 3)
- B (-2, 3)
- C (-2, -5)
- D (2, -3)

21. The strength of the linear association between two variables can be determined by calculating the correlation coefficient, r . Which of the following would indicate the strongest linear association between the variables?

- A $r = -0.973$
- B $r = -0.823$
- C $r = 0.913$
- D $r = 0.863$

22. The table shows the relationship between the amount of time spent practicing an instrument and the number of mistakes made during the recital.

<i>Practice Time (hours)</i>	<i>Mistakes Made</i>
1	11
1.5	10
2	8
3	6
3.5	7
5	5
7	3
10	1

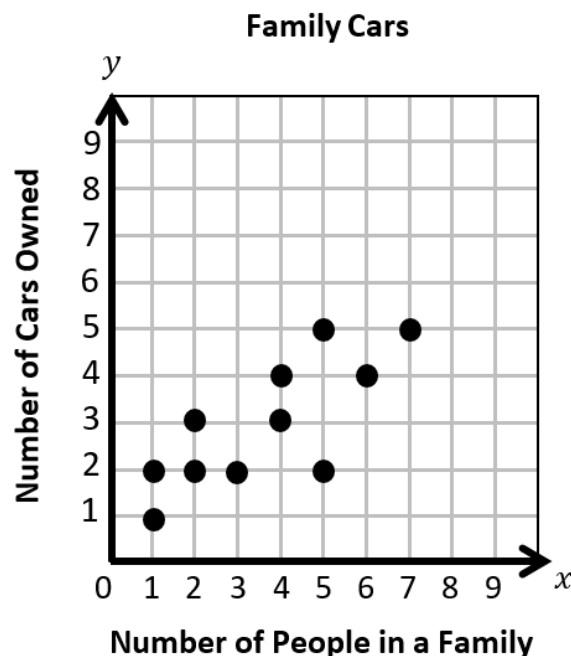
Based on the data in the table, which of the following statements is true?

- A The correlation coefficient is -0.96 and indicates a strong negative linear association.
- B The correlation coefficient is -0.96 and indicates a weak negative linear association.
- C The correlation coefficient is 0.96 and indicates a strong positive linear association.
- D The correlation coefficient is 0.96 and indicates a weak positive linear association.

23. Which of the following shows a correlation and a causation?

- A** The weight of an animal versus its level of aggressiveness
- B** The height of a child versus their level of reading
- C** The cost of a family's vacation versus the size of their home
- D** The number of hours a batter spends practicing at a batting cage versus their batting average

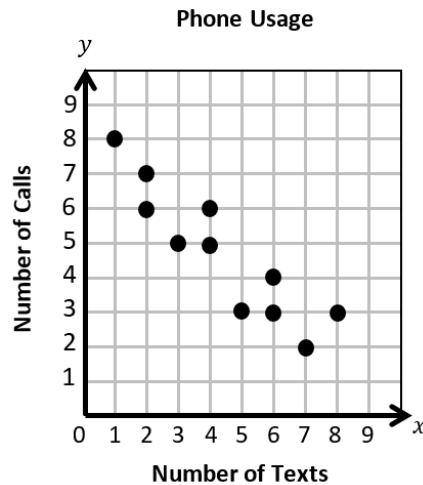
24. The scatterplot shows the number of cars a family owns and the number of people in the family.



Based on the scatterplot, which of the following statements is true?

- A** The data shows a positive correlation and it is a causation.
- B** The data shows a positive correlation, but it does not represent causation.
- C** The data shows a negative correlation, but it does not represent causation.
- D** The data does not show a correlation nor does it represent causation.

25. The scatterplot shows the number of texts and the number of calls made daily for 11 days.



Which function best models the data?

- A** $y = -3.5x + 7$
- B** $y = -0.1x + 2$
- C** $y = -0.77x + 8$
- D** $y = -2.5x + 7.5$

26. The tables shows the number of purchases made at a store during a sale.

Days Since Sale Began	1	2	3	4	5	6
Number of Purchases	20	27	25	30	32	42

Based on the data, which is closest to the number of purchases made at the end of the 9th sale day?

- A** 50
- B** 65
- C** 42
- D** 69

Reporting Category #2 Answer Key:

Texas TEK	Question	Answer
A.3 B (R)	1	C
A.3 B (R)	2	-2.5
A.3 B (R)	3	B
A.3 B (R)	4	B
A.3 C (R)	5	A
A.3 C (R)	6	D
A.3 C (R)	7	B
A.3 C (R)	8	B
A.3 D (S)	9	A
A.3 D (S)	10	D
A.3 A (S)	11	C
A.3 A (S)	12	B
A.3 E (S)	13	C
A.3 E (S)	14	A
A.3 F (S)	15	D
A.3 F(S)	16	C
A.3 G (S)	17	B

Texas TEK	Question	Answer
A.3 G (S)	18	D
A.3 H (S)	19	C
A.3 H (S)	20	B
A.4 A (S)	21	A
A.4 A (S)	22	A
A.4 B (S)	23	D
A.4 B (S)	24	B
A.4 C (S)	25	C
A.4 C (S)	26	A

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