

8.4C Determine Rate of Change or Slope and Y-intercept

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- 1 The table shows the linear relationship between the number of hours Francis worked,  $x$ , and the amount of money Francis earned,  $y$ .

Francis's Earnings

Number of Hours Worked	1.25	3.75	5.5
Amount Earned	\$17.50	\$52.50	\$77.00

Based on the table, how much did Francis earn per hour?

- A \$17.50 per hour
- B \$14.00 per hour
- C \$35.00 per hour
- D \$24.50 per hour

- 2 The table below shows some values that satisfy a linear function.

X	Y
-5	0
-3	3
-1	6
1	9
3	12

What is the slope of the line that is represented by the values in the table above?

- F  $\frac{-3}{2}$
- G  $\frac{-2}{3}$
- H  $\frac{2}{3}$
- J  $\frac{3}{2}$

- 3 A gym charges a membership fee plus an additional fee per yoga class. The table shows the linear relationship between the number of yoga classes taken and the total cost including the membership fee.

Yoga Classes

Number of Yoga Classes	Total Cost
6	\$67.50
8	\$75.00
10	\$82.50
14	\$97.50
20	\$120.00

Which statement is true?

- A The additional fee per yoga class is \$3.75.
  - B The additional fee per yoga class is \$8.25.
  - C The membership fee is \$35.00.
  - D The membership fee is \$42.50.
- 4 Beatrice won her town lottery. She has been awarded a monetary gift and will receive equal payments each month for the next 10 years. The table shows the total of Beatrice's winnings at the end of  $x$  months.

Number of Months, $x$	2	4	7	11
Lottery Winnings, $y$	850	1,150	1,600	2,200

How much was Beatrice given for winning, and how much is Beatrice given each month?

- F Beatrice was given \$650 for winning, and she will receive a \$200 payment each month.
- G Beatrice was given \$550 for winning, and she will receive a \$150 payment each month.
- H Beatrice was given \$550 for winning, and she will receive a \$200 payment each month.
- J Beatrice was given \$650 for winning, and she will receive a \$150 payment each month.

- 5 The table shows the number of gallons of gasoline in a car's gas tank after the car has been driven  $x$  miles.

Gasoline Usage

Miles Driven, $x$	Gallons of Gasoline in Tank, $y$
0	15
10	14.6
20	14.2
35	13.6
60	12.6
75	12

When these data are graphed on a coordinate grid, the points all lie on the same line. What are the slope and  $y$ -intercept of this line?

- A** Slope =  $\frac{1}{25}$ ,  $y$ -intercept = 375
- B** Slope =  $-\frac{1}{25}$ ,  $y$ -intercept = 15
- C** Slope = 25,  $y$ -intercept = 375
- D** Slope =  $-25$ ,  $y$ -intercept = 15

6 The table below shows the cost to travel by local taxi.

Taxi Cost

Number of Miles	Cost (dollars)
6	12.20
8	14.60
10	17.00
12	19.40
14	21.80

Based on the data in the table, what are the slope and the  $y$ -intercept?

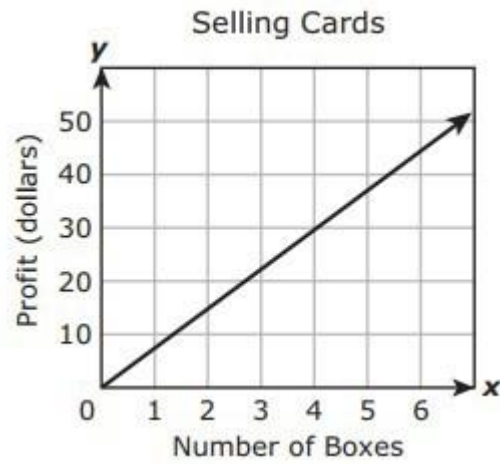
**F** Slope = 1.2;  $y$ -intercept = 5

**G** Slope = 2.4;  $y$ -intercept = 9.8

**H** Slope = 1.2;  $y$ -intercept = 9.8

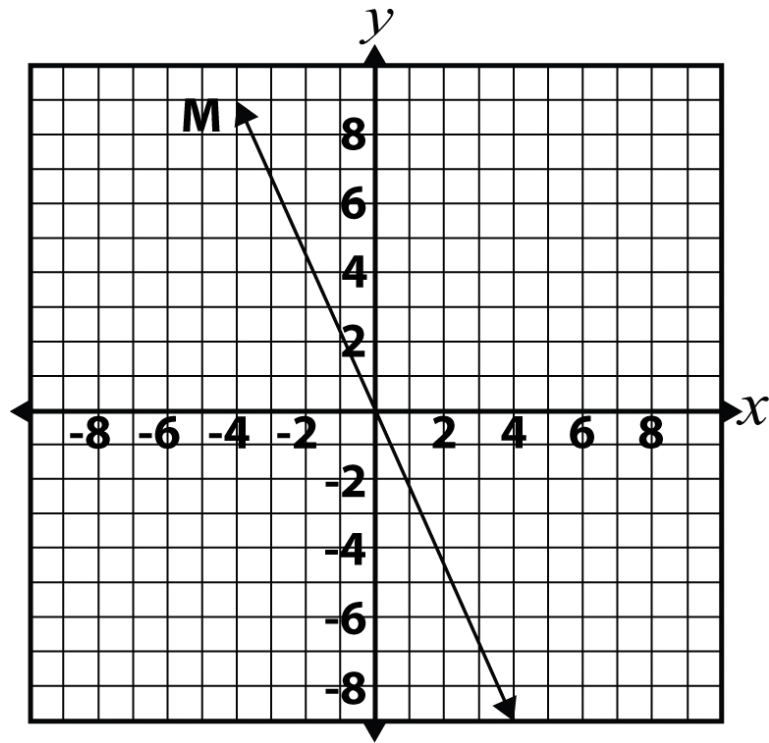
**J** Slope = 2;  $y$ -intercept = 2.4

- 7 Emily sells greeting cards. The graph models the linear relationship between the number of boxes of cards she sells and her profit.



Which of these best describes the profit Emily makes from selling these cards?

- A \$7.50 per box
- B \$10.00 per box
- C \$4.00 per 30 boxes
- D \$3.00 per 4 boxes



Which of the following best represents the slope of line *M* shown above?

**F**  $\frac{1}{2}$

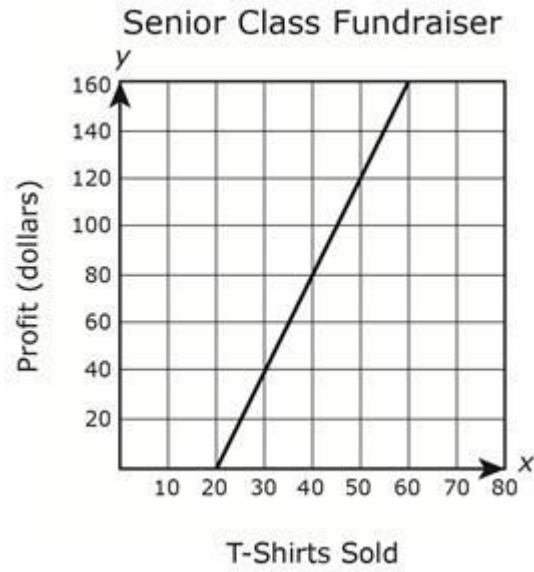
**G**  $-2$

**H**  $-\frac{1}{2}$

**J**  $2$



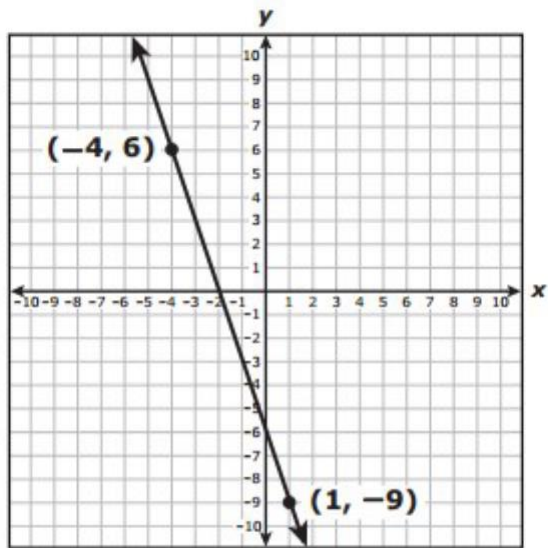
- 9 The senior class is selling T-shirts for a fundraiser. The graph below shows the profit, in dollars, the senior class will earn based on the number of T-shirts sold.



What is the slope of the line shown in this graph?

- A \$4 per shirt
- B \$2 per shirt
- C \$0.50 per shirt
- D \$0.25 per shirt

10 The graph of a linear function is shown on the coordinate grid.

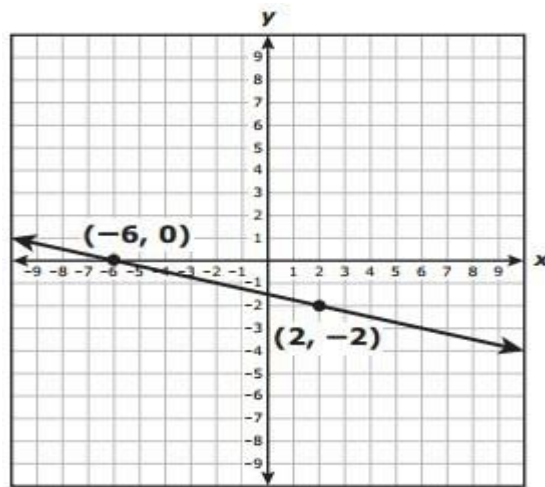


What is the y-intercept of the graph of the linear function?

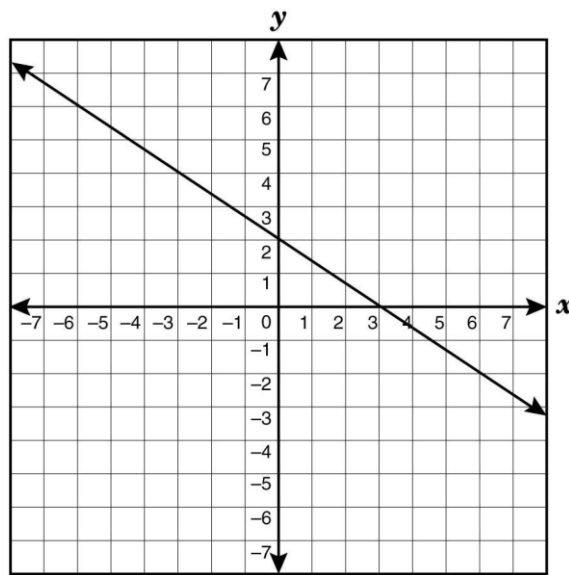
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A large empty rectangular area for writing the answer, bounded by a horizontal line at the top and a vertical line on the left side.

- 11 What are the slope and the y-intercept of the graph of the linear function shown on the grid?



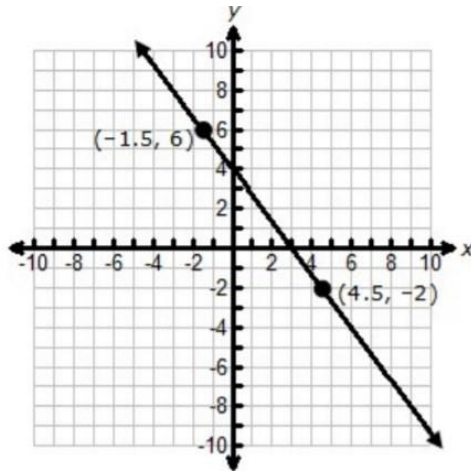
- A Slope = 4, y-intercept = -6
- B Slope = -4, y-intercept = -1.5
- C Slope =  $-\frac{1}{4}$ , y-intercept = -1.5
- D Slope =  $\frac{1}{4}$ , y-intercept = -6



Which expression below best describes the graph above?

- F** A line with a  $y$ -intercept of 2 and a slope of  $\frac{2}{3}$ .
- G** A line with a  $y$ -intercept of 3 and a slope of  $\frac{-2}{3}$ .
- H** A line with a  $y$ -intercept of 2 and a slope of  $\frac{-2}{3}$ .
- J** A line with an  $x$ -intercept of 3 and a slope of  $\frac{-3}{2}$ .

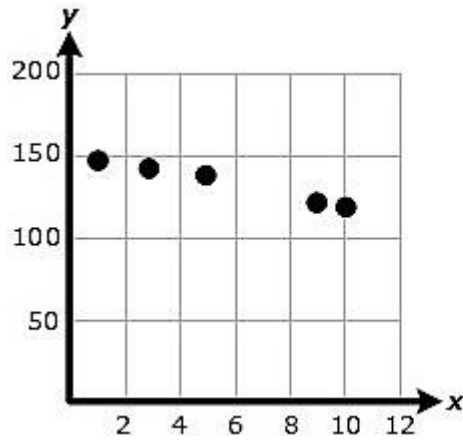
**13** The graph of the linear function is shown on the coordinate grid below.



What are the slope and y-intercept of the linear function shown in the grid?

- A** Slope =  $\frac{4}{3}$ , y-intercept = 3
- B** Slope =  $\frac{3}{4}$ , y-intercept = 3
- C** Slope =  $-\frac{4}{3}$ , y-intercept = 4
- D** Slope =  $-\frac{3}{4}$ , y-intercept = 4

**14** A linear function is shown on the graph and in the table.



x	y
1	147
3	141
5	135
9	123
10	120

What are the slope and  $y$ -intercept of the linear function?

- F** The slope is  $-\frac{1}{3}$  and the  $y$ -intercept is 147.
- G** The slope is 3 and the  $y$ -intercept is 147.
- H** The slope is  $-3$  and the  $y$ -intercept is 150.
- J** The slope is  $\frac{1}{3}$  and the  $y$ -intercept is 150.