

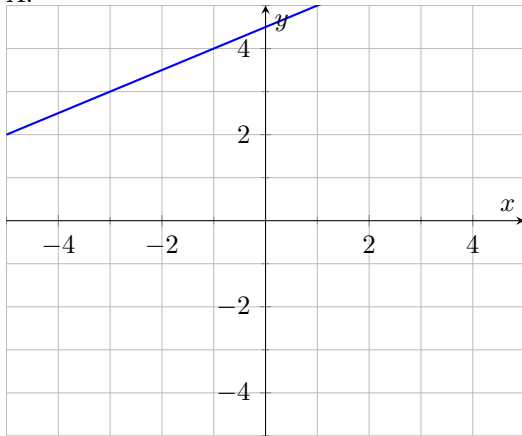
1. Use the given table of values for a linear function to determine the equation of this line in slope-intercept

$x$	$y$
0	2
1	5
2	8
3	11
4	14

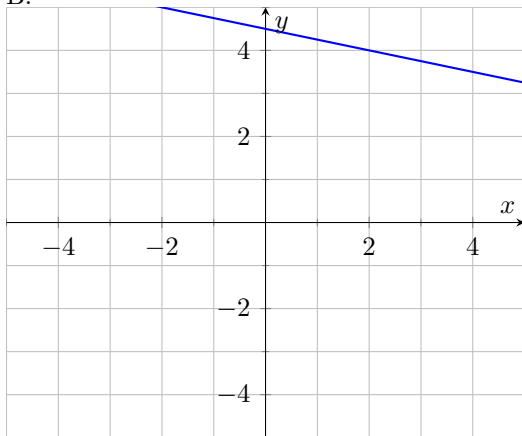
- form
- A. The equation of the line is  $f(x) = -3x + 4$ .
  - B. The equation of the line is  $f(x) = 3x$ .
  - C. The equation of the line is  $f(x) = 3x - 1$ .
  - D. The equation of the line is  $f(x) = 3x - 3$ .
  - E. The equation of the line is  $f(x) = -3x - 4$ .
  - F. The equation of the line is  $f(x) = 3x - 5$ .
  - G. The equation of the line is  $f(x) = 3x + 3$ .
  - H. The equation of the line is  $f(x) = 3x + 2$ .

2. Using the point-slope form, graph the line  $y - 4 = -\frac{1}{4}(x - 2)$ .

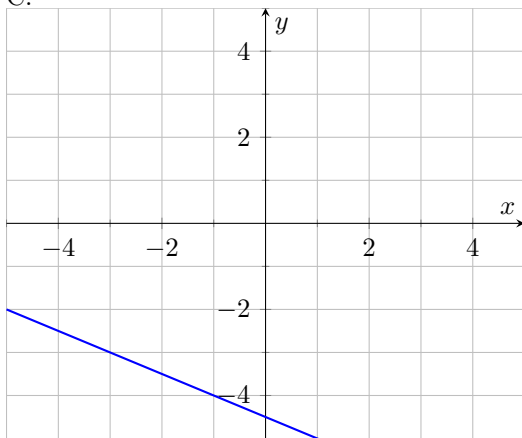
A.



B.

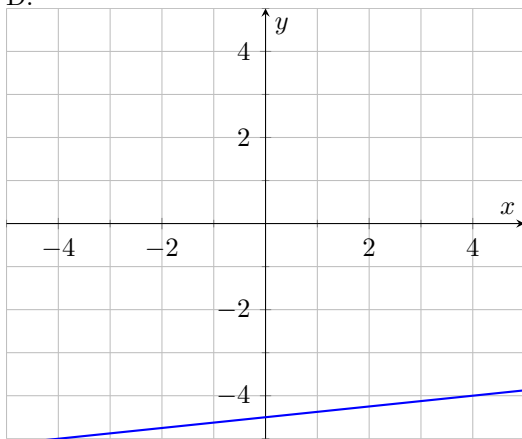


C.

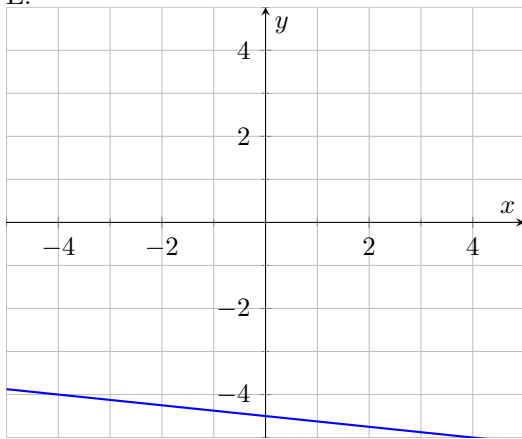


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D.



E.



3. The main fuel tank on one aircraft contains 4900 gal of jet fuel when fuel begins to be pumped from this tank. The volume of fuel remaining in the tank  $x$  minutes after the fuel pump has been turned on is

$x$ minutes	$y$ gallons
0	4900
7	4774
14	4648
21	4522
28	4396

displayed in the table. (a.) Determine the slope of the line containing these points.

(b.) Interpret the meaning of the slope from part (a.). (c.) Write a function  $f$  so that  $f(x)$  gives the number of gallons of fuel left after  $x$  minutes. Caution: be careful with units.

A. (a.) The slope is -18 gallons/minute. (b.) This means that for every minute of travel, the volume of fuel in the tank will decrease by 18 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = -18x + 4900$ .

B. (a.) The slope is 9 gallons/second. (b.) This means that for every second of travel, the volume of fuel in the tank will decrease by 9 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = 9x + 4900$ .

C. (a.) The slope is -9 gallons/minute. (b.) This means that for every minute of travel, the volume of fuel in the tank will decrease by 9 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = -9x + 4900$ .

D. (a.) The slope is 18 gallons/second. (b.) This means that for every second of travel, the volume of fuel in the tank will decrease by 18 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = 18x + 4900$ .

E. (a.) The slope is 9 gallons/minute. (b.) This means that for every minute of travel, the volume of fuel in the tank will decrease by 9 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = 9x + 4900$ .

F. (a.) The slope is -18 gallons/second. (b.) This means that for every second of travel, the volume of fuel in the tank will decrease by 18 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = -18x + 4900$ .

G. (a.) The slope is 18 gallons/minute. (b.) This means that for every minute of travel, the volume of fuel in the tank will decrease by 18 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = 18x + 4900$ .

H. (a.) The slope is -9 gallons/second. (b.) This means that for every second of travel, the volume of fuel in the tank will decrease by 9 gallons. (c.) The amount of fuel in terms of travel time is given by the function  $f(x) = -9x + 4900$ .

4. Use the point-slope form to write an equation of a line passing through the points  $(-9, 3)$  and  $(-5, 9)$

A.  $y + 3 = \frac{5}{4}(x - 9)$

B.  $y - 3 = \frac{13}{6}(x + 9)$

C.  $y + 3 = 3(x - 9)$

D.  $y + 9 = \frac{7}{4}(x - 5)$

E.  $y - 9 = \frac{3}{2}(x + 5)$

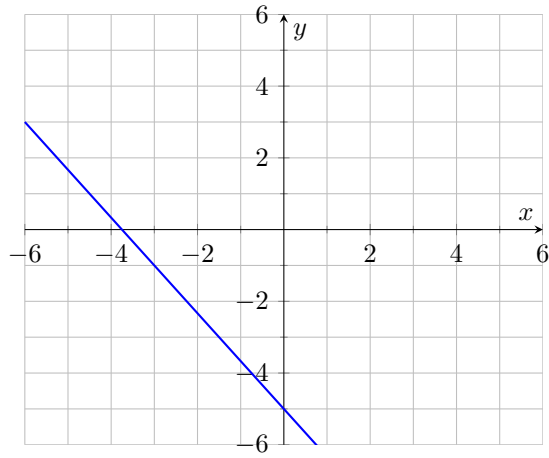
F.  $y - 3 = 3(x + 9)$

G.  $y - 9 = \frac{3}{4}(x + 5)$

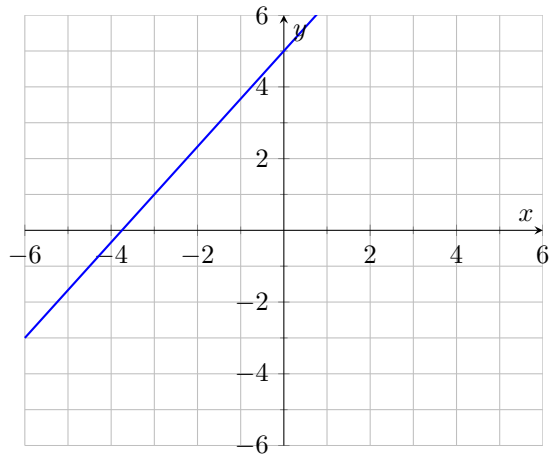
H.  $y + 9 = \frac{9}{4}(x - 5)$

5. Using the slope and  $y$ -intercept, and pencil and paper, graph the line  $f(x) = 5$ .

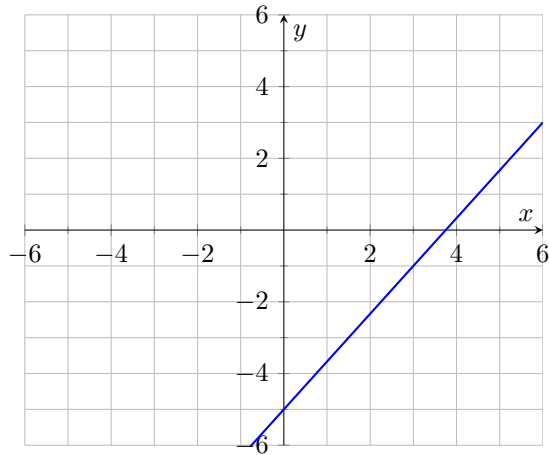
A.



B.

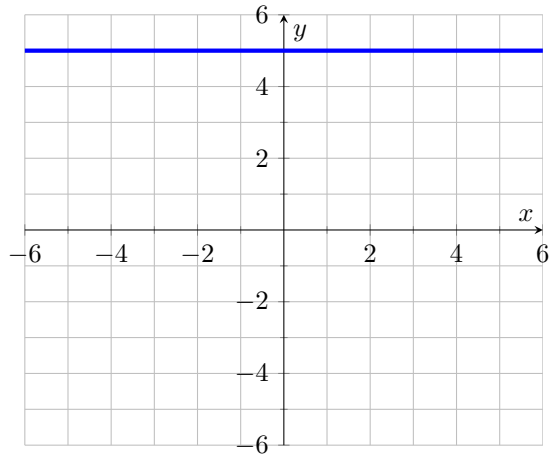


C.

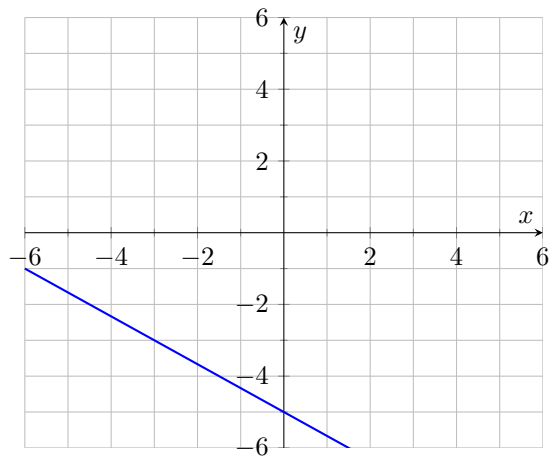


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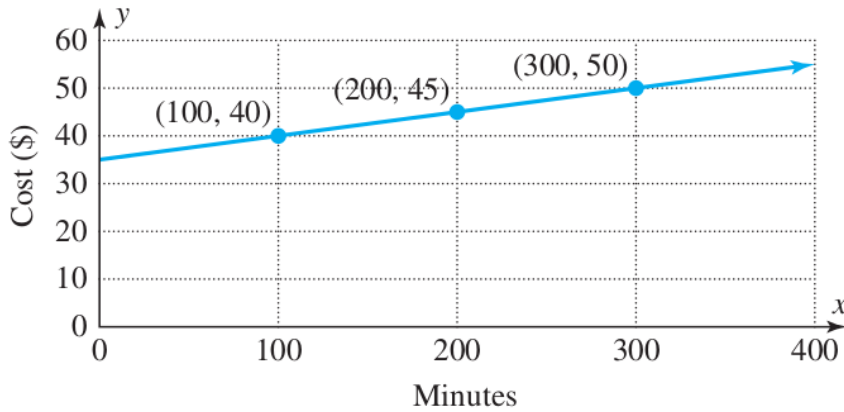
D.



E.



6. The graph gives the monthly cost for a cell phone based on the number of minutes used. Use this graph to determine the linear equation  $f(x) = mx + b$  of this line. Then interpret the meaning of  $m$  and  $b$  in this problem.



A. The slope of this line is  $1/10$  dollars/minute. This means that for every minute a customer talks on the phone,  $1/10$  of a dollar (10 cents) will be added to their next bill. The  $y$ -intercept is 35 dollars. This means that, before making any calls, the initial cost of the plan is 35 dollars.

B. The slope of this line is 35 dollars/hour. This means that for every hour a customer talks on the phone, 35 dollars will be added to their next bill. The  $y$ -intercept is 50 dollars. This means that the final cost of the plan is 50 dollars.

C. The slope of this line is  $1/20$  miles/hour. This means that for every mile, the time to the truck's destination decreases by  $1/20$  minutes. The  $y$ -intercept is 35 hours. This means that the initial distance from the truck's destination is 35 miles.

D. The slope of this line is  $1/20$  dollars/minute. This means that for every minute a customer talks on the phone,  $1/20$  of a dollar (5 cents) will be added to their next bill. The  $y$ -intercept is 35 dollars. This means that, before making any calls, the initial cost of the plan is 35 dollars.

E. The slope of this line is 10 dollars/hour. This means that for every hour a customer talks on the phone, 10 dollars will be added to their next bill. The  $y$ -intercept is 35 dollars. This means that, before making any calls, the initial cost of the plan is 35 dollars.

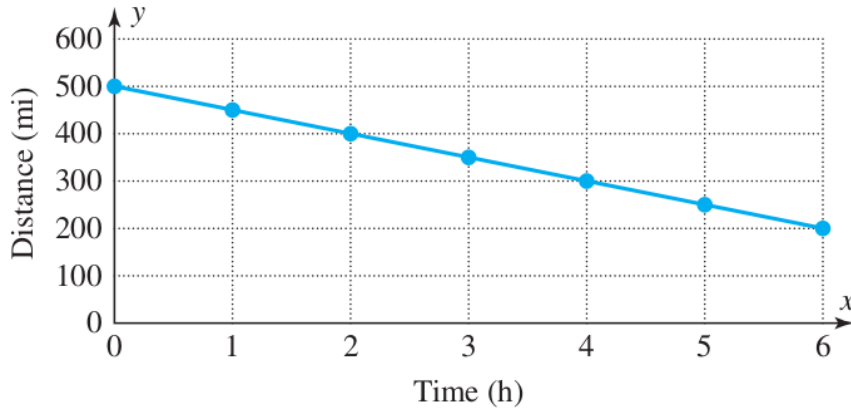
F. The slope of this line is  $1/10$  miles/hour. This means that for every mile, the time to the truck's destination increases by  $1/10$  minutes. The  $y$ -intercept is 35 miles. This means that the truck has already travelled 35 miles.

G. The slope of this line is 35 dollars/hour. This means that for every hour a customer talks on the phone, 35 dollars will be added to their next bill. The  $y$ -intercept is 100 dollars. This means that the final cost of the plan is 100 dollars.

H. The slope of this line is 20 dollars/hour. This means that for every hour a customer talks on the phone, 20 dollars will be added to their next bill. The  $y$ -intercept is 35 dollars. This means that, before making any calls, the initial cost of the plan is 35 dollars..



7. This graph gives the distance from the dispatch center for a truck at different times. Use this graph to determine the linear equation  $f(x) = mx + b$  of this line. Then interpret the meaning of  $m$  and  $b$  in this problem.



- A. The slope of this line is 50 miles/hour. This means that for every hour, the distance to the truck's destination increases by 50 miles. The  $y$ -intercept is 500 miles. This means that the truck has already travelled 500 miles.
- B. The slope of this line is 50 miles/hour. This means that for every mile, the time to the truck's destination increases by 50 minutes. The  $y$ -intercept is 500 miles. This means that the truck has already travelled 500 miles.
- C. The slope of this line is 100 miles/hour. This means that for every mile, the time to the truck's destination increases by 100 minutes. The  $y$ -intercept is 500 miles. This means that the truck has already travelled 500 miles.
- D. The slope of this line is -100 miles/hour. This means that for every hour, the distance to the truck's destination decreases by 100 miles. The  $y$ -intercept is 500 miles. This means that the initial distance from the truck's destination is 500 miles.
- E. The slope of this line is 100 miles/hour. This means that for every hour, the distance to the truck's destination increases by 100 miles. The  $y$ -intercept is 500 miles. This means that the truck has already travelled 500 miles.
- F. The slope of this line is -100 miles/hour. This means that for every mile, the time to the truck's destination decreases by 100 minutes. The  $y$ -intercept is 500 miles. This means that the initial distance from the truck's destination is 500 miles.
- G. The slope of this line is -50 miles/hour. This means that for every hour, the distance to the truck's destination decreases by 50 miles. The  $y$ -intercept is 500 miles. This means that the initial distance from the truck's destination is 500 miles.
- H. The slope of this line is -50 miles/hour. This means that for every mile, the time to the truck's destination decreases by 50 minutes. The  $y$ -intercept is 500 miles. This means that the initial distance from the truck's destination is 500 miles.

8. Lines whose slopes are opposite reciprocals of each other are \_\_\_\_\_.

- A. undefined
- B. parallel
- C. vertical
- D. perpendicular