

1) Find the slope of a line through points $(2, -4)$ and $(-8, -7)$.

A $\frac{10}{3}$

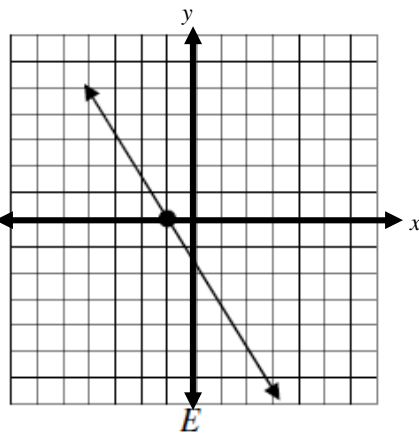
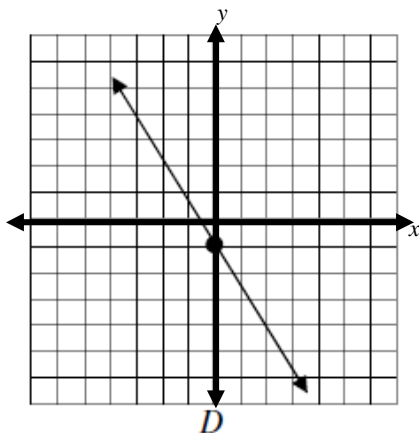
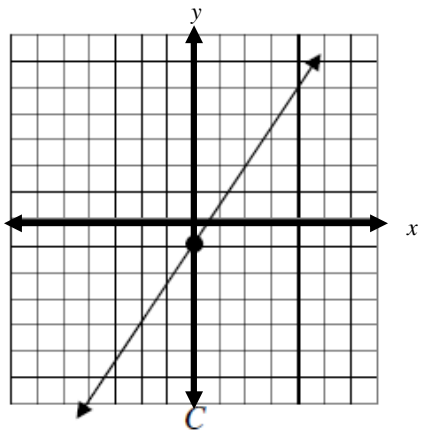
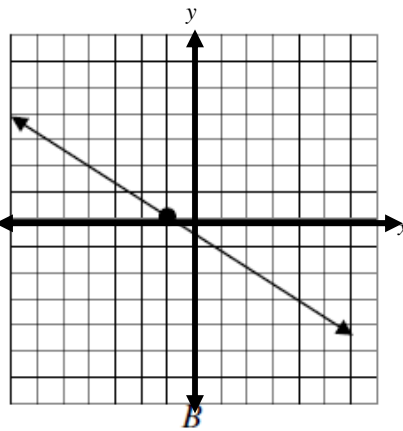
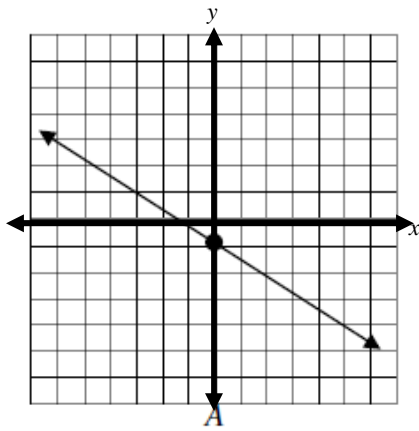
B $\frac{1}{2}$

C $-\frac{1}{2}$

D $-\frac{3}{10}$

E $\frac{3}{10}$

2) Which graph best approximates the line $y = -\frac{3}{2}x - 1$? The scale used on both axes is 1 unit per hash mark.



- 3) The trade-in value of a lawn mower can be determined using the function $V(n) = -75n + 980$, where the value is in dollars and n represents the number of summers the lawn mower has been used. What does the number -75 represent?
- A The lawn mower will completely depreciate (lose its value) after 75 summers.
B The lawn mower's value has decreased by \$75.
C The lawn mower's value is decreasing by \$75 per summer.
D The lawn mower was purchased 75 summers ago.
E The lawn mower was purchased for \$75.
- 4) Which statement is **false**?
- A The line $x = 5$ is vertical.
B The line $y = -2$ has a slope of 0.
C A vertical line has zero slope.
D The **x -intercept** of $y = 2x - 6$ is 3.
E $2x - 3y = 12$ is a linear equation.
- 5) Find the equation of a line with point $(6, -1)$ and slope of $-\frac{2}{3}$ in standard form.
- A $2x + 3y = 9$
B $3x + 2y = 9$
C $2x - 3y = 15$
D $3x - 2y = 20$
E $2x + 3y = -15$
- 6) A line has an equation $y - 4 = -2(x + 7)$. Give the slope of the line and an indicated point.
- A slope: -2 , point: $(7, -4)$
B slope: 2 , point: $(-7, 4)$
C slope: -4 , point: $(-2, 7)$
D slope: 4 , point: $(-2, -7)$
E slope: -2 , point: $(-7, 4)$

7) Which pair(s) of lines described would be perpendicular?

A $y = \frac{4}{3}x + 2$ and $y = -\frac{4}{3}x - \frac{1}{2}$

B $y = -3x + 1$ and $y = \frac{1}{3}x$

C $y = -\frac{9}{10}x - 3$ and $y = -\frac{9}{10}x + 9$

D $y = \frac{7}{5}x - \frac{2}{5}$ and $y = \frac{5}{7}x + 100$

E None of the above.

8) Find the equation of a line (in slope-intercept form) that passes through the point $(-4, 9)$ and is parallel to the line $y = \frac{1}{2}x - 2$.

A $y = -2x + 1$

B $y = -\frac{1}{2}x + 9$

C $y = -2x - 1$

D $y = \frac{1}{2}x + 11$

E $y = \frac{1}{2}x + 7$

9) Given: $f(x) = 3x - 5$ and $g(x) = 12 - \frac{20}{3}x$, find $(f + g)(-12)$.

A $(f + g)(-12) = -133$

B $(f + g)(-12) = 121$

C $(f + g)(-12) = 51$

D $(f + g)(-12) = -109$

E None of the above.

- 10) Use the graph of functions $f(x)$ and $g(x)$ to find the values of $(f + g)(-4)$ and $(f \cdot g)(2)$.

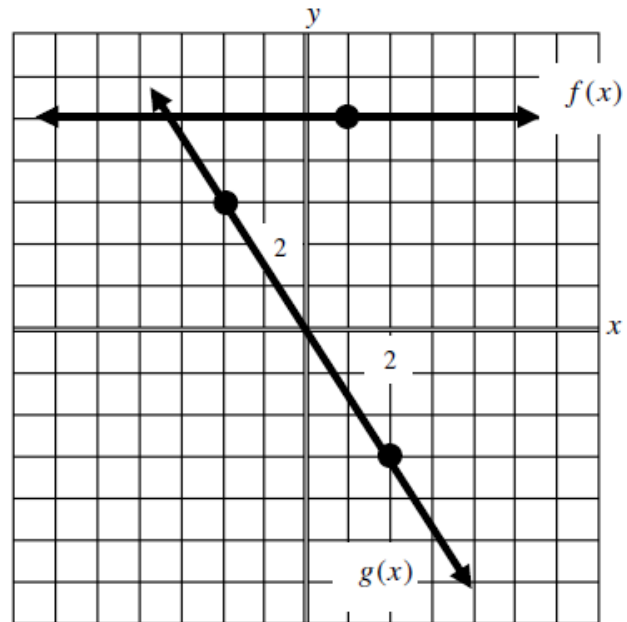
A $(f + g)(-4) = 11,$
 $(f \cdot g)(2) = -15$

B $(f + g)(-4) = -20,$
 $(f \cdot g)(2) = -15$

C $(f + g)(-4) = -44,$
 $(f \cdot g)(2) = 2$

D $(f + g)(-4) = 11,$
 $(f \cdot g)(2) = 2$

E $(f + g)(-4) = -44,$
 $(f \cdot g)(2) = -15$



- 11) Justin sends an average of 249 email messages in a week. If the number of personal messages Justin sends is 39 more than the number of business messages he sends, which system of equations could be used to find how many on average of each type of email message he sends in a week. Let b represent the number of business email messages and p represent the number of personal email messages.

A $\begin{cases} b - p = 249 \\ b = p + 39 \end{cases}$

B $\begin{cases} b + p = 249 \\ p = b + 39 \end{cases}$

C $\begin{cases} b - p = 249 \\ p = b + 39 \end{cases}$

D $\begin{cases} p = b + 249 \\ b + p = 39 \end{cases}$

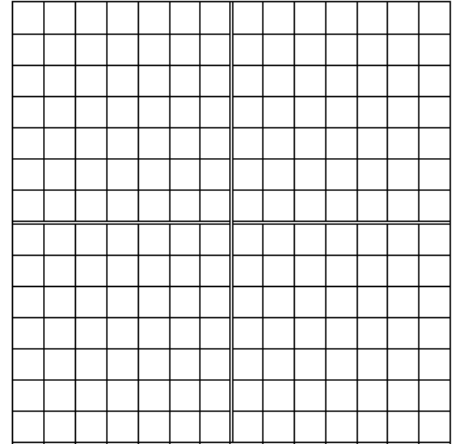
E None of the above.

- 12) Solve the following system of equations graphically. Which statement is **true**?

$$x + y = -1$$

$$y = \frac{1}{2}x + 5$$

- A* The x -coordinate of the solution is 4 and the solution is found in Q I.
- B* The x -coordinate of the solution is -3 and the solution is found in Q IV.
- C* The y -coordinate of the solution is -3 and the solution is found in Q III.
- D* The y -coordinate of the solution is -4 and the solution is found in Q IV.
- E* The y -coordinate of the solution is 3 and the solution is found in Q II.



- 13) Examine the work to solve a system of equation shown below. Which statement(s) is(are) determined to be **true** from the work shown?

$$\begin{aligned} \begin{cases} x = 6 - y \\ x + y = 6 \end{cases} &\rightarrow (6 - y) + y = 6 \\ &6 - y + y = 6 \\ &0 = 0 \end{aligned}$$

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|------------|------------------------------|
| <i>I</i> | The system is inconsistent. |
| <i>II</i> | The equations are dependent. |
| <i>III</i> | There is no solution. |

- A* I and III only
- B* II only
- C* I and II only
- D* III only
- E* I, II, and III

- 14) Solve this system of equations and find the value of y .

$$\begin{aligned}x &= 9 - 4y \\ 3x - 2y &= 6\end{aligned}$$

A $y = \frac{3}{2}$

B $y = 3$

C $y = \frac{2}{3}$

D $y = \frac{33}{10}$

E $y = \frac{21}{10}$

- 15) Mary stocked up on greeting cards by purchasing 25 cards at Wal-Mart. The cards were a combination of \$2.50 cards and \$3.00 cards. If she paid \$70 for the cards (before tax), how many of the \$2.50 kind were purchased?

A 12

B 10

C 15

D 20

E None of the above.