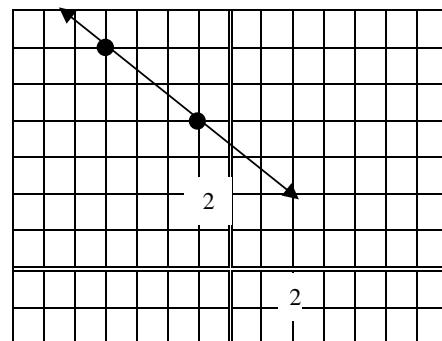


- 1) Which linear equation(s) is(are) matched with a correct slope?

- | | |
|-----|--|
| I | line with equation $4x - 3y = 24$, slope is $\frac{4}{3}$ |
| II | line graphed at the right , slope is $-\frac{3}{2}$ |
| III | line with equation $y = 2$, slope is 0 |



- A I and II only
 B I only
 C II and III only
 D III only
 E I and III only
- 2) Which of the following systems is matched with a correct solution?

A $\begin{cases} 3x + 3y = -3 \\ x - y = 1 \end{cases}$, $(2, -3)$

B $\begin{cases} 3x + y = 2 \\ 5x + y = 0 \end{cases}$, $(-1, 5)$

C $\begin{cases} 4x - 10y = 22 \\ x - 3y = -5 \end{cases}$, $(8, 1)$

D $\begin{cases} 6x - 4y = 2 \\ 9x - y = 10 \end{cases}$, $(1, -1)$

E None have a correct solution.

- 3) Find the equation of a line (in slope-intercept form) with slope $\frac{1}{7}$ and point $(-5, 2)$.

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

B $y = \frac{3}{2}x + 4$

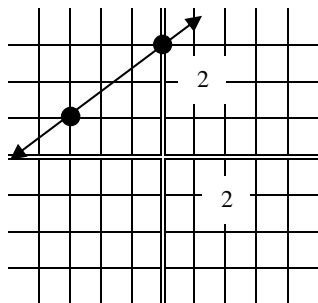
C $y = 7x + 37$

D $y = 7x + 4$

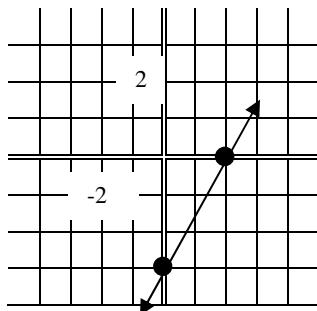
E $y = \frac{1}{7}x + \frac{19}{7}$

- 4) Which is the graph of the line $3x - 2y = 6$?

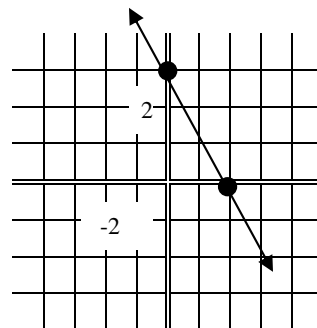
A



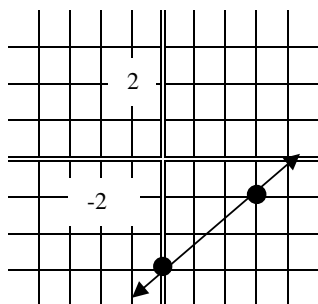
B



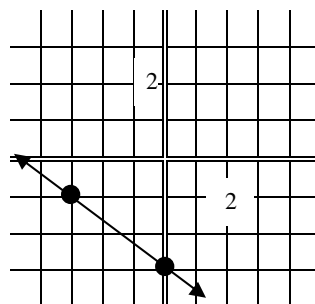
C



D



E



- 5) Which of the following lines is perpendicular to the line containing points $(4, 3)$ and $(-2, 5)$?

- A $y = 3x + 2$
 B $y = -\frac{1}{3}x + 12$
 C $y = x + 4$
 D $y = \frac{1}{3}x - 5$
 E $y = -3x$

- 6) If $F(x) = -3x - 5$ and $G(x) = x^2 - 3x$, find $(F \cdot G)(-2)$.

- A -10
 B 2
 C -110
 D 10
 E None of the above.

- 7) What is the equation of a line with the points (0, 6) and (-4, 0)?

A $y = \frac{3}{2}x + 6$

B $y = \frac{3}{2}x - 4$

C $y = \frac{2}{3}x + 6$

D $y = -\frac{3}{2}x - 4$

E $y = -\frac{3}{2}x + 6$

- 8) Find the value of a in the solution of this system.

$$6a + 2b = 20$$

$$3a - 6b = 3$$

A $a = \frac{3}{7}$

B $a = 3$

C $a = \frac{19}{5}$

D $a = \frac{19}{7}$

E $a = 1$

- 9) Find the solution to the system below by graphing each line.
In which quadrant is the solution found?

$$x = 2y + 4$$

$$4x + 2y = -14$$

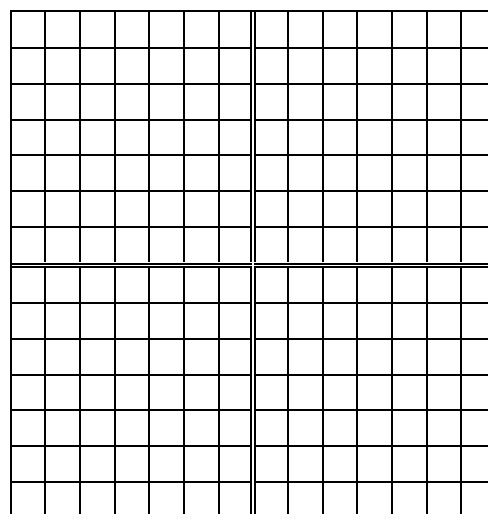
A I

B II

C III

D IV

E None. The solution lies on an axis.



- 10) A chemist must make 20 liters of a 35% acid solution. She only has available some 40% acid and some 20% acid solution. Using a system of equations of 2 variables, determine how much of the 20% acid solution should be used?
- A 5 liters
 - B 10 liters
 - C 3 liters
 - D 15 liters
 - E 8 liters
- 11) The value of an office machine can be determined by $V(t) = -150t + 1325$, where t is the number of years after purchase and $V(t)$ is the value (in dollars) for t years after purchase. In how many years after purchase will the machine be worthless (value of \$0)? Which statement describes this number of years?
- A Less than 4 years
 - B Between 4 and 6 years
 - C Between 6 and 8 years
 - D Between 8 and 10 years
 - E More than 10 years
- 12) Determine an indicated point and the slope of the line with the equation $y - 3 = \frac{5}{4}(x + 8)$.
- A $(8, -3)$, slope: $-\frac{5}{4}$
 - B $(-8, 3)$, slope: $\frac{5}{4}$
 - C $(-8, -3)$, slope: $\frac{4}{5}$
 - D $(3, -8)$, slope: $\frac{5}{4}$
 - E $(-8, 3)$, slope: $-\frac{5}{4}$

- 13) The sum of two integers is 2. If the largest integer is doubled, the result is 22 more than the smaller integer. Let L represent the larger integer and s represent the smaller integer. Which system of equations could be used to find both integers?

A
$$\begin{aligned} L + s &= 2 \\ 2L + s &= 22 \end{aligned}$$

B
$$\begin{aligned} L + s &= 2 \\ L &= 2s + 22 \end{aligned}$$

C
$$\begin{aligned} L + s &= 2 \\ 2L &= s + 22 \end{aligned}$$

D
$$\begin{aligned} L + s &= 22 \\ 2L &= s + 2 \end{aligned}$$

E
$$\begin{aligned} L &= s + 2 \\ 2L &= s + 22 \end{aligned}$$

- 14) Solve the system of equations below and select the true statement(s).

$$3x + 6y = -10$$

$$x = -2y - 5$$

- I There are infinitely many solutions.
II There is no solution.
III The system is inconsistent.

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

- 15) Which of the following statements is true given the equation $x = -\frac{4}{3}$.

- A Its graph is a horizontal line.
B The point $(0, 0)$ is on the graph of the line.
C The line has a y-intercept at $\left(0, -\frac{4}{3}\right)$.
D The line has undefined slope.
E None of the above.