BRONX COMMUNITY COLLEGE
of the City University of New York

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

MATH 05 Exam 3
Nikos Apostolakis July 25, 2016

Name: _____

Directions: Write your answers in the provided space. To get full credit you *must* show all your work. Simplify your answers whenever possible. Be certain to indicate your final answer clearly. **Each problem is worth** 5 **points**

1. Given $a = 2$ and $b = -3$, evaluate the expression given below.

$$a^2b + ab + b^2$$

A. -15 B. -9 C. 3 D. 27

2. Given $a = -4$, $b = -5$, and $c = -1$, evaluate the expression given below.

$$b^2 - 4ac$$

A. -9 B. 9 C. 41 D. -41

3. Solve for x:

$$\frac{2x}{3} + \frac{1}{2} = \frac{5}{6}$$

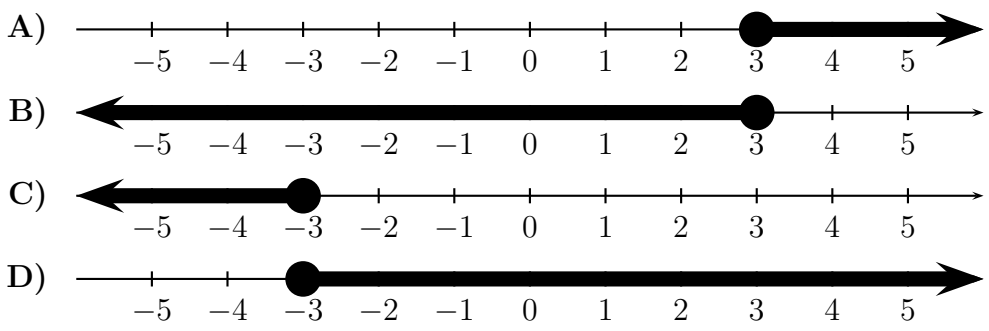
A. $x = \frac{1}{2}$ B. $x = \frac{2}{3}$ C. $x = \frac{3}{2}$ D. $x = 2$

4. Solve for x: $z = 5x + y$

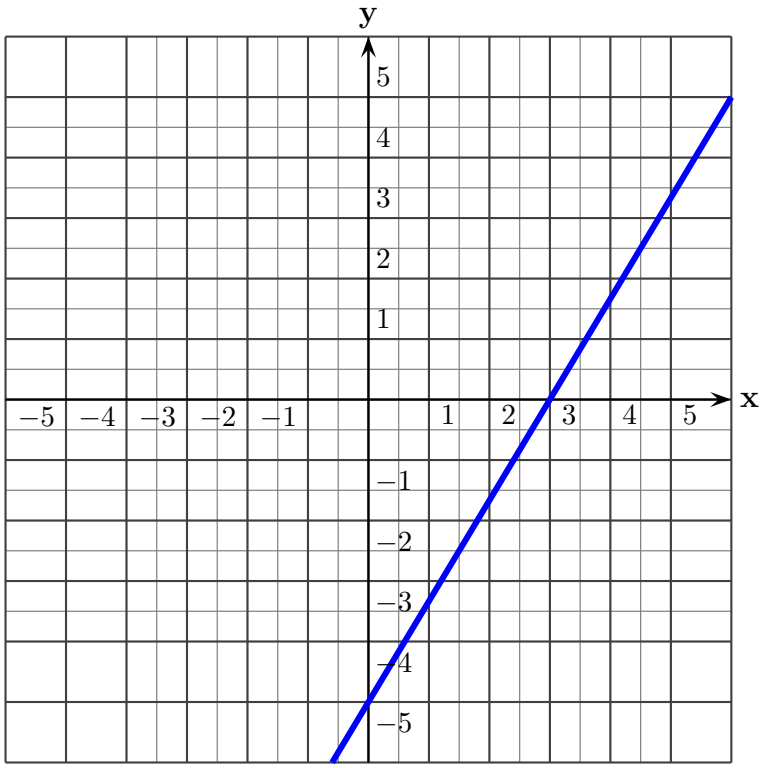
A. $x = \frac{z+y}{5}$ B. $x = \frac{z-y}{5}$ C. $x = \frac{z}{5} - y$ D. $x = 5(z - y)$

5. Find the graph of the solution to the inequality.

$$3x + 5 \geq 5x - 1$$



6. What is the slope of the line graphed below?



7. Find the slope and the x– and y–intercepts of the line with equation $2x - 5y = 20$.

8. A line has slope $\frac{2}{3}$ and passes through the point $(0, -4)$. Find it's equation.

9. A line has slope -3 and passes through the point $(1, 7)$. Find its equation.

10. A line passes through the points with coordinates $(2, -3)$ and $(-1, 3)$. Find its equation.

11. A vertical line passes through the point $(-1, 3)$. Find it's equation.

12. A horizontal line passes through the point $(-6, -7)$. Find it's equation.

13. Find the slope and the y intercept of the graph of the equation $3x + 4y = 8$

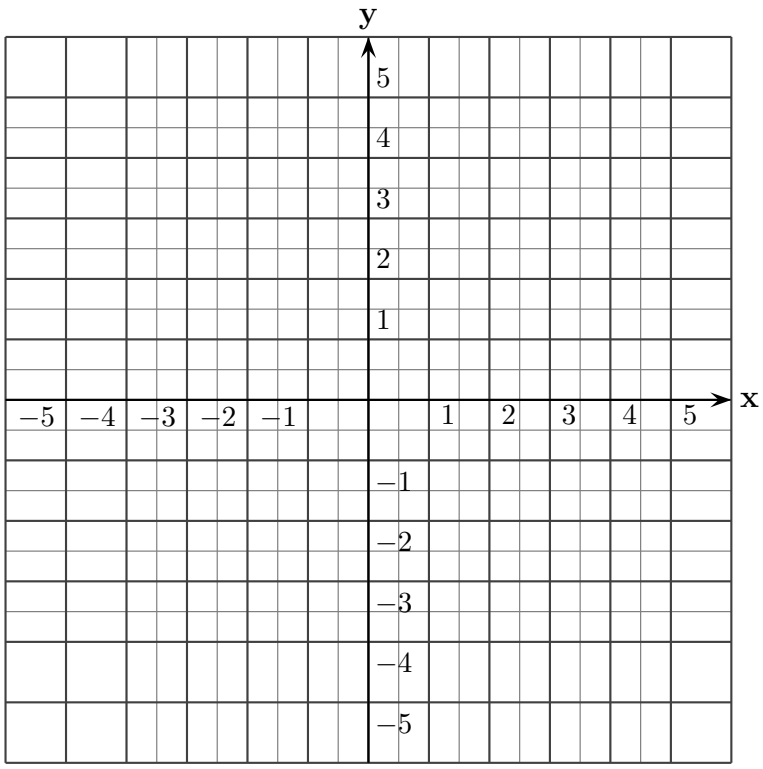
A. slope$= -\frac{3}{4}$ and y-intercept $(0, 2)$

B. slope$= \frac{4}{3}$ and y-intercept $(0, 8)$

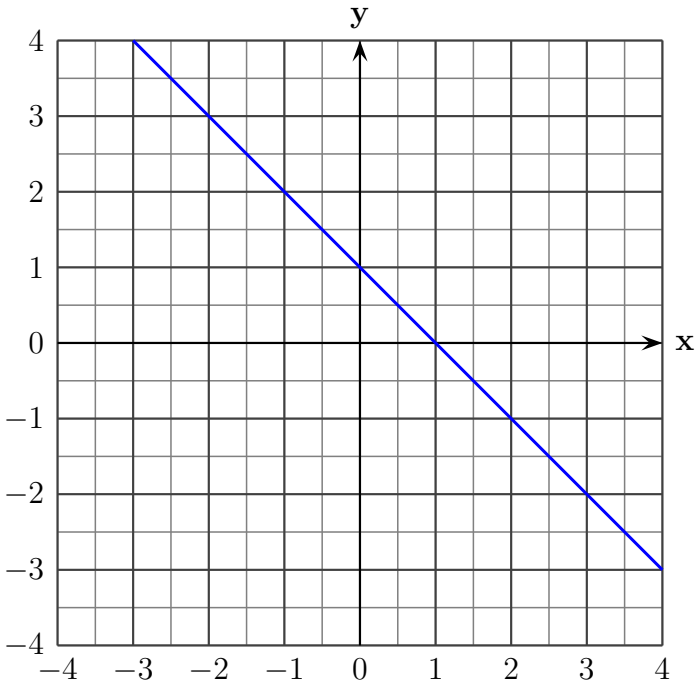
C. slope$= \frac{3}{4}$ and y-intercept $(0, 2)$

D. slope$= -\frac{3}{3}$ and y-intercept $(0, 8)$

14. Graph the line with equation $-3x + 2y = 6$ in the following grid.



15. Choose the correct equation for the line whose graph is shown below:



A. $x - y = 1$

B. $x + y = 1$

C. $x + y = -1$

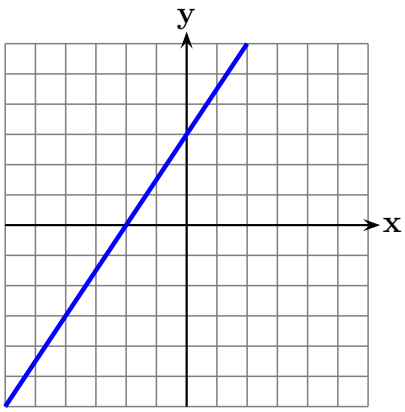
D. $x - y = -1$

16. Complete the following table of solutions for the equation $6x - 5y = 30$.

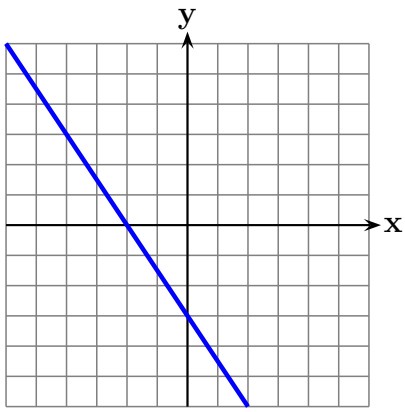
x	y
0	
	0
1	
-1	
	1

17. Which of the following is the graph of the equation?

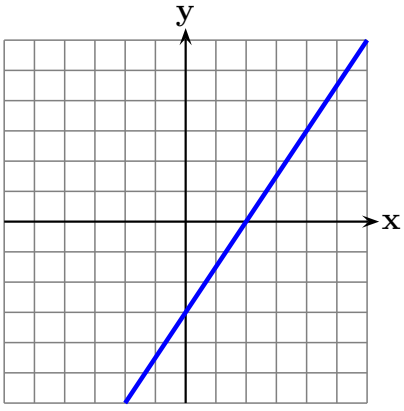
$$3x - 2y = -6$$



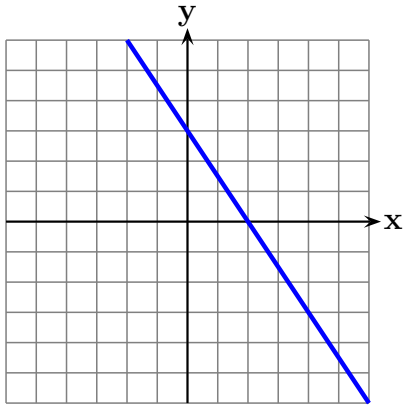
(A)



(B)



(C)



(D)

18. What is the value of the y-coordinate of the solution to the following system of equations?

$$\begin{cases} x + 3y &= 2 \\ -3x - 8y &= 4 \end{cases}$$

A. $y = -2$ B. $y = 10$ C. $y = 6$ D. $y = -10$

19. What is the value of the x-coordinate of the solution to the following system of equations?

$$\begin{cases} 2x + y &= 3 \\ -5x - 2y &= 4 \end{cases}$$

A. $x = 2$ B. $x = -10$ C. $x = 10$ D. $x = -7$

20. Solve the system: $\begin{cases} 2x - 3y &= -10 \\ 3x + 2y &= -2 \end{cases}$