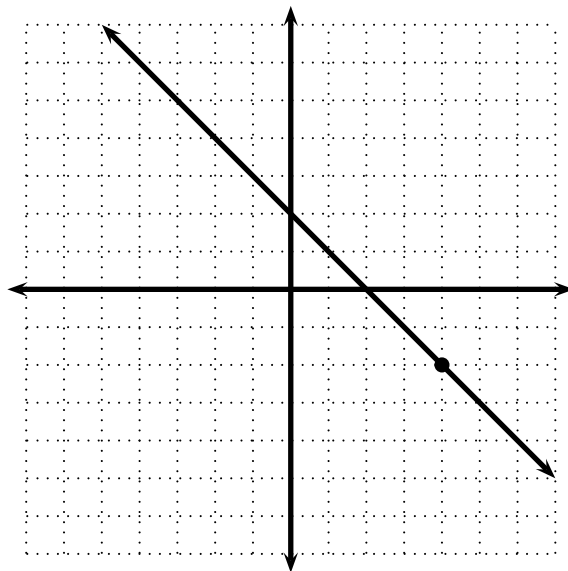


Directions: No calculators may be used. Be sure to *show ALL of your work*. Depending on the problem, you may receive **NO CREDIT** if no work is shown even if the answer is correct. If your answer is a fraction, reduce it to lowest terms. If there is a blank, write your answer in the blank, otherwise **circle your answer**. Once this test is graded and returned **keep this test** to study from for the final exam. You may use the scratch paper I provide, but if you do you must copy all work over on to this test paper. Scratch paper will not be graded. Each problem is worth 5 points.

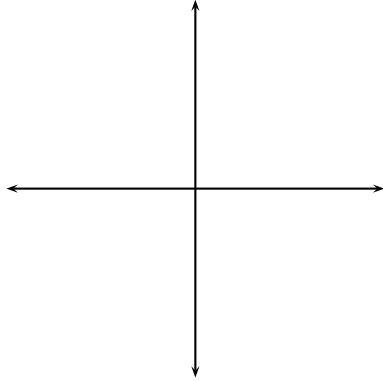
Use the graph provided to answer the questions below it.



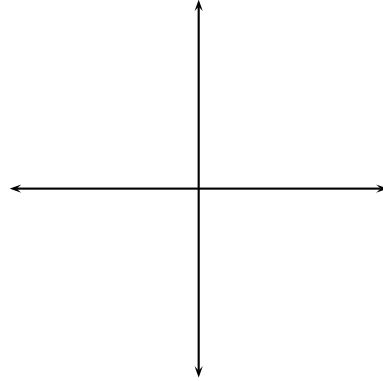
- The y-intercept of the line is _____ (write this answer as an ordered pair).
The slope of the line is _____. Given this information, the slope-intercept form of the equation of this line is _____.
- The point plotted on the line is represented by the ordered pair _____. This point is in quadrant _____.

Draw a line fitting the description on each grid.

3. Draw a line with a slope of 0.

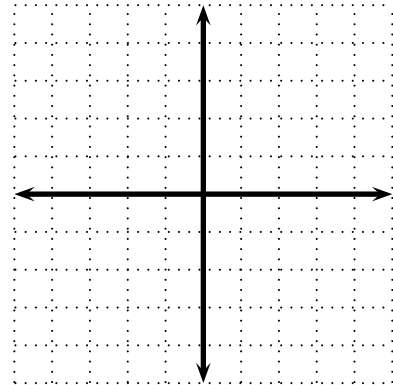


4. Draw a line with a negative slope.

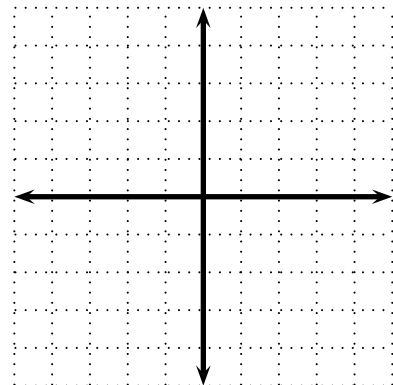


Graph the lines represented by the linear equations given below.

5. $3y - 2x = 9$



6. $y = x$



Find the equation of the line given information about that line. Give your answer in slope-intercept form.

7. The line has a slope of $-\frac{2}{5}$ and a y -intercept $(0,10)$.

8. The line goes through the points $(-1, 2)$ and $(12, 3)$.

9. The line goes through the point $(-2, 4)$ and is perpendicular to $y = \frac{2}{3}x - 11$

Find the intercepts of the line and write your answers in the blanks provided.

10. $y = \frac{2}{5}x - 2$

The x -intercept is _____

The y -intercept is _____

Systems of Linear Equations - Solve each system using any of the methods we have covered. State your answer and then label the system using as many of the following terms as apply: *consistent*, *inconsistent*, *dependent*, *independent*. CLEARLY INDICATE your answer and your labels.

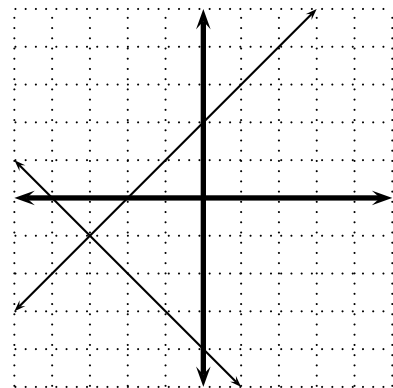
11. Solve the system.

$$\begin{cases} x - 3y = 6 \\ 12y = 4x - 12 \end{cases}$$

12. Solve the system.

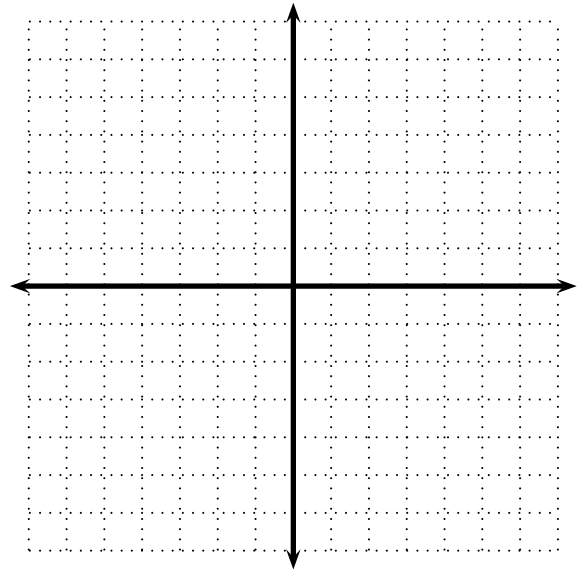
$$\begin{cases} 4y = x - 16 \\ y + 9 = -x \end{cases}$$

13. What is the solution to the system pictured at right?



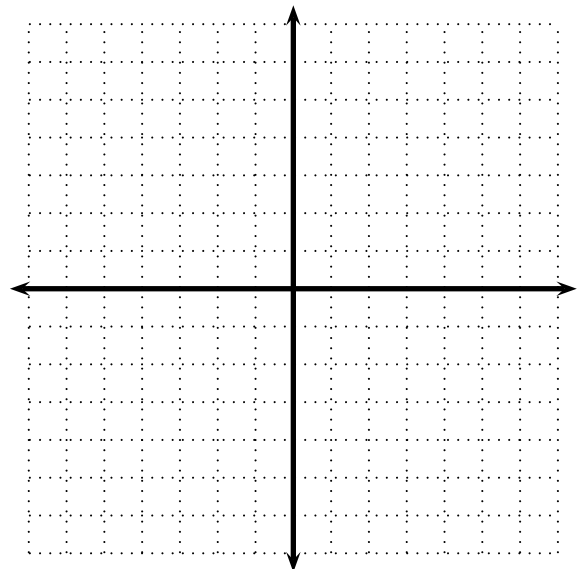
Linear Inequalities.

14. Graph the inequality $2x - 3y < 9$



15. Graph the system of linear inequalities:

$$\begin{cases} 2x - 3y \geq 6 \\ 2y < 6 - x \end{cases}$$



Slope

16. What is the slope of the line $2x - 4y = 13$?

17. What is the slope of the line going through the points $(-3, 4)$ and $(-5, -8)$?

Applications - Set up a system of equations to solve each of the application problems. Show your work clearly and circle your answer.
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18. A bank teller has some five-dollar bills and some twenty-dollar bills. The teller has 5 more twenties than fives. The total value of the money is 725 dollars. Find the number of five-dollar bills that the teller has.

19. Two trains leave the same city at the same time. One travels north and the other travels south at 20 miles per hour faster. In two hours the trains are 280 miles apart. Find their speeds.

20. How many gallons of a 12% saline solutions must be mixed with a 20% saline solution to get 10 gallons of a 14% solution?