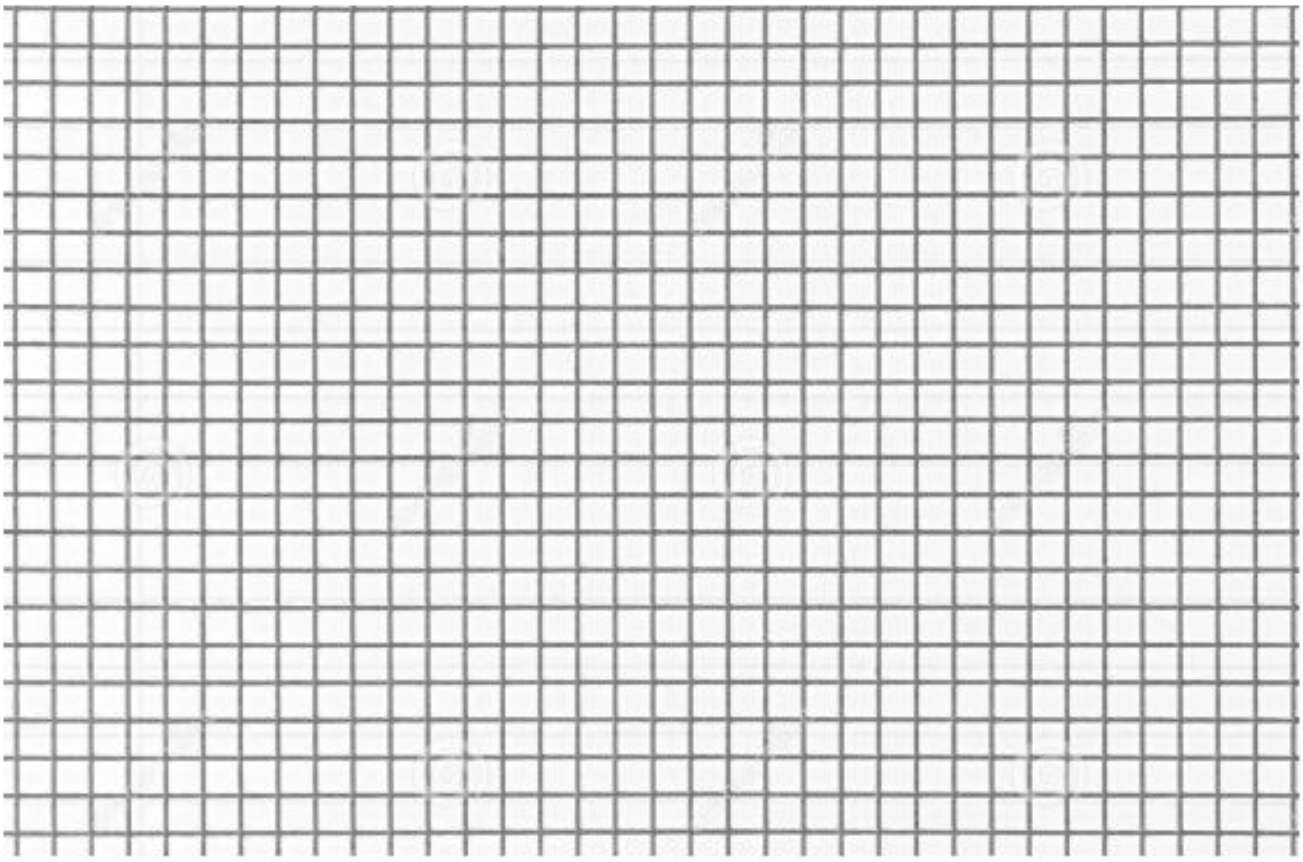
<u>Day 1:</u> Solving by Tables and Graphing

<u>CHUBBY BUNNY:</u> Joselyn has a bunny that weighs 5 pounds and gains 3 pounds per year. Her cat weighs 19 pounds and gains 1 pound per year. When will the bunny and the cat weight the same amount?

To solve this problem, first write an equation for each animal (hint: y=mx+b). Then, complete the table and graph the equations on the same coordinate plane below.

Bunny Equation: _____ Cat Equation: _____

Years (x)	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Bunny									
Cat									



1) When will they weigh the same amount? Where do you see the answer in the table? Where do you see the answer on the graph? Circle where you see it in/on the table and graph.

Read the definitions:

A **system of equations** is two or more equations working together. In the problem on page 1, the system of equations was y = 3x + 5 and y = x + 19.

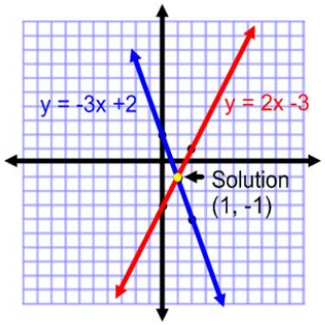
The **solution** to a system of equations is the point of intersection (x,y) on the graph. In a table, the same solution (x,y) can be found where the two y-values are the same.

Read the examples below:

Example 1: Graph the system to find the solution of y = -3x + 2 and y = 2x - 3

y = -3x +2
y = 2x -3

Step 1: Graph each equation.



Step 2: Find the point of intersection. This is your solution.

The solution to this system of equations is (1, -1).

Solution: __(1, -1)__

Example 2: Complete the table to find the solution of y = 2x - 5 and y = -x + 7

Use a table to find the solution to linear system.

y = 2x − 5 y = −x + 7

x	0	2	4
Value of 2x - 5	-5	-1	3
Value of -x + 7	7	5	3

Solution: ___(4, 3)___

Do these problems:

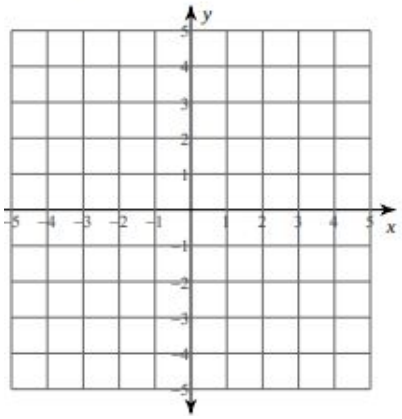
2) Complete the table to find the solution of y = −3x + 4 and y = 3x − 2

x	y = -3x + 4	y = 3x - 2
-1		
0		
1		
2		

Solution: _____

3) Find the solution to this system by graphing:

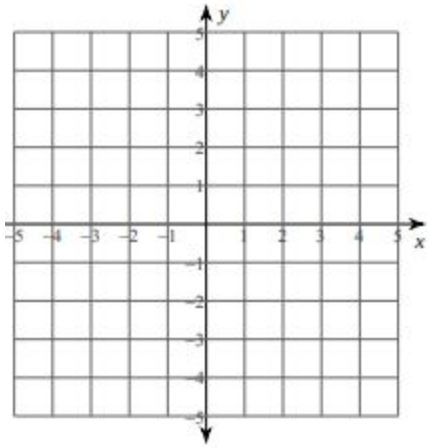
$$y = -\frac{5}{3}x + 3$$
$$y = \frac{1}{3}x - 3$$



Solution: _____

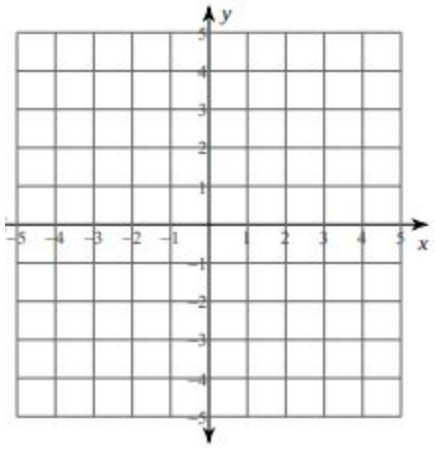
Practice

4) $y = 4x + 3$
$y = -x - 2$



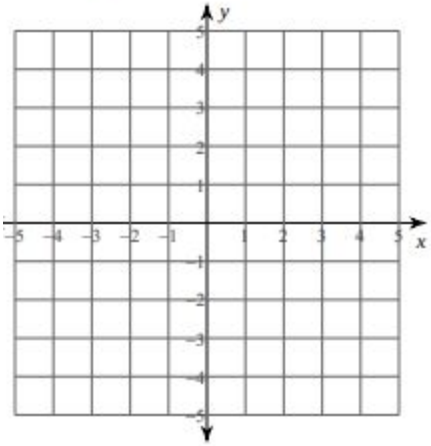
Solution: _____

5) $y = -\frac{1}{2}x - 1$
$y = \frac{1}{4}x - 4$



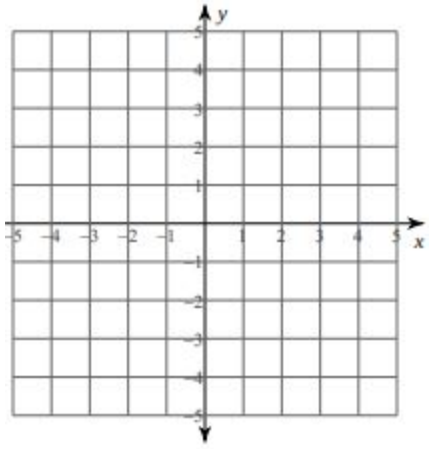
Solution: _____

6) $y = 3x - 4$
$y = -\frac{1}{2}x + 3$



Solution: _____

7) $y = -\frac{1}{2}x - 2$
$y = -\frac{3}{2}x + 2$



Solution: _____

8) Complete the table to solve.

x	y = 2x + 4	y = -3x + 44
-4		
0		
4		
8		

Solution: _____

Practice Solving & Graphing

Solve for the variable. Check your solution.

9) $-3(4r - 8) = -36$

10) $-3(1 + 6r) = 14 - r$

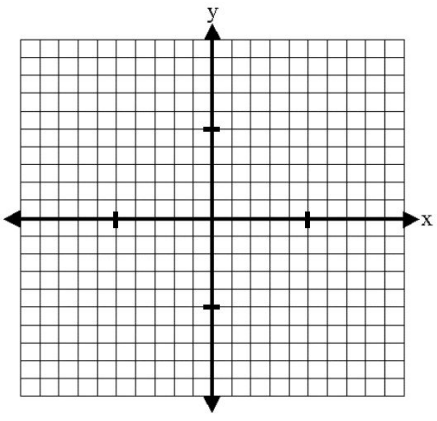
11) $-12 = 3 - 2k - 3k$

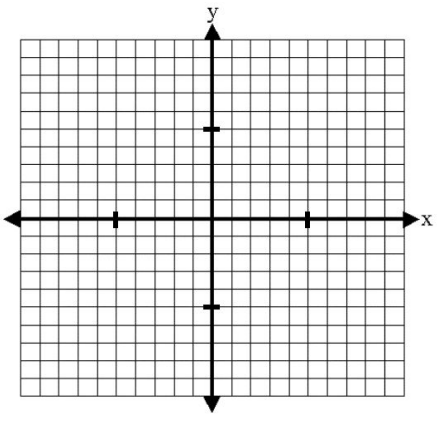
Graph the following linear equations (*hint: think about what you need to do first to the equation to be able to graph it).*

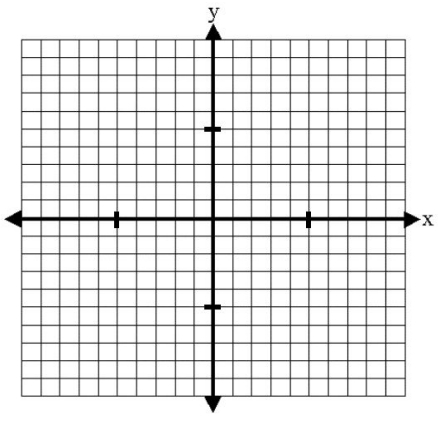
12) $7x + y = 5$

13) $3x + 5y = -5$

14) $y = -3(x - 2)$







Solve the following proportions. If necessary, round answers to the nearest tenth (0.1).

15) $\frac{10}{8} = \frac{n}{10}$

16) $\frac{7}{n} = \frac{8}{7}$

17) $\frac{7}{b+5} = \frac{10}{5}$