

5A Intro to Systems and Graphing

Name: _____ Per: _____

SHOW YOUR WORK FOR FULL CREDIT. NO WORK, NO CREDIT. NO WORK IN PEN.

- The line $y = 2x + 5$ has _____ solutions. This means that there are an infinite number of points for which the equation will still be true. Give two examples: (____, ____) and (____, ____).
- A system of equations is _____ or more equations. Graphing will estimate how many _____ the system has.
- If the lines intersect, there is _____ solution. There is only _____ point where they intersect.
- If the lines are _____, there are no solutions and their slopes will be the _____.
- If the equations are for the same line, there are an _____ number of solutions. The _____ and y-intercepts are the same. These equations may not look the _____, but can be simplified to be the same.

For the following questions: 1) List the two **SLOPES**. 2) **GRAPH** the pairs of lines. 3) If they cross, **CIRCLE** where they intersect.

6. Line A: $y = -\frac{3}{2}x + 4$

Line B: $y = \frac{2}{3}x + 1$

7. Line C: $y = 2x + 3$

Line D: $y = 2x - 5$

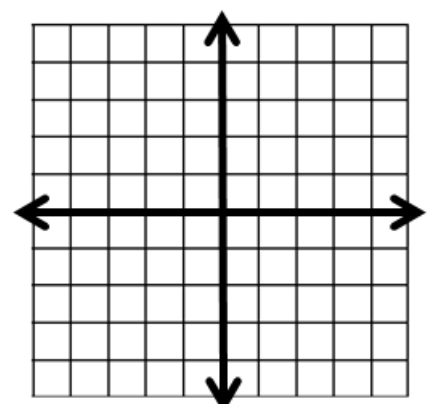
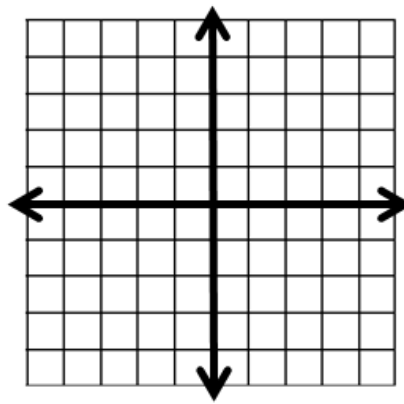
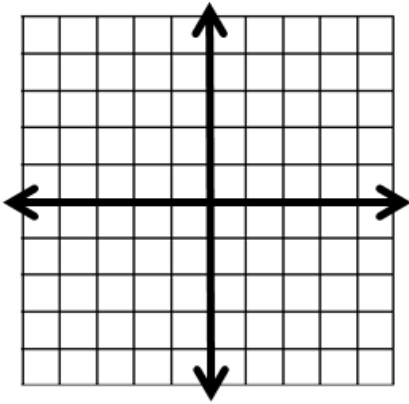
8. Line E: $y = \frac{1}{3}x - 4$

Line F: $y = -4x + 5$

Slope A: _____ & B: _____

Slope C: _____ & D: _____

Slope E: _____ & F: _____



CIRCLE whether the following equations are **parallel**, the **same line**, or have only **one intersecting point**.

EXPLAIN how do you know (HDYK)

9. $y - \frac{1}{2}x = 4$

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

parallel, the same, intersecting
HDYK _____

10. $y = 2x$

$y = -3(x - 1)$

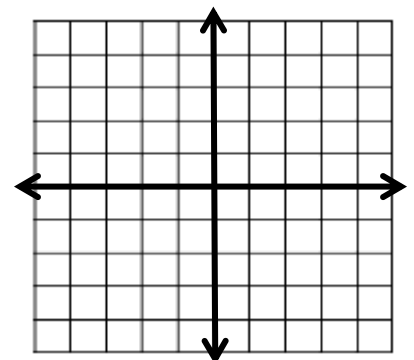
parallel, the same, intersecting
HDYK _____

11. $\frac{1}{3}x + y = 2$

$y = 3x - 4$

parallel, the same, intersecting
HDYK _____

12. A system has at least two equations. One line passes through the points (2, 3) and (0, 5). **Plot** these points, **graph** the line, and **label** it line A. The other line passes through points (1, 1) and (0, -1). **Plot** the points, **graph** the line, and **label** it line B. **Circle** the intersection point. The solution is: _____. How do you know? _____



Extra Credit: Write the equations of the lines of

Line A: _____ Line B: _____

13. Gregory's Motorsports has ATVs (four wheels) and motorcycles (two wheels) in stock. The store has a total of 45 vehicles that have a total of 130 wheels. (These equations should look familiar.)

a. Define your variables: A: _____ M: _____

b. Make a table showing the **number of vehicles**.

- With 12 ATV's, how many motorcycles? _____
- With 8 ATV's, how many motorcycles? _____

A	M
0	
	0

c. Make table showing the **number of wheels**.

- With 12 ATV's, how many motorcycle wheels would there be? _____ How many motorcycles? _____
- With 8 ATV's, how many motorcycle wheels would there be? _____ How many motorcycles? _____

A	M
0	
	0

NOTE: In this table, A + M should **NOT** equal 130!

d. Write 2 equations (a system) that represents the situation.

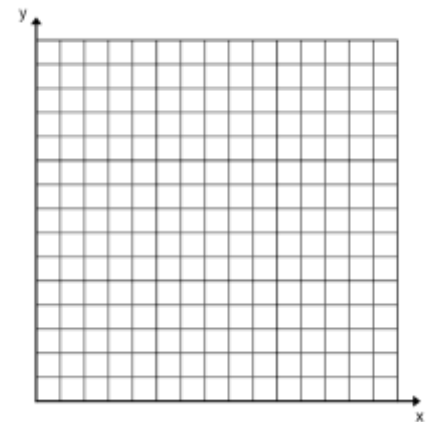
Number of vehicles: _____

Number of wheels: _____

e. Solve the system by graphing the equations. Estimate the solution by finding the point of intersection. Solution: _____.

f. What does your solution mean? _____

g. Check by **plugging** your solution into **both equations**:

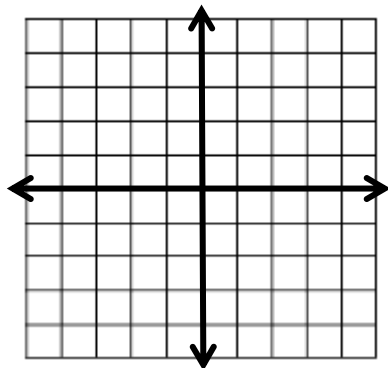


Solve each system by **GRAPHING**. **CHECK** your answers and **SYW!**

(No credit if answers not checked below.)

14. $y - 3x = -4$

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

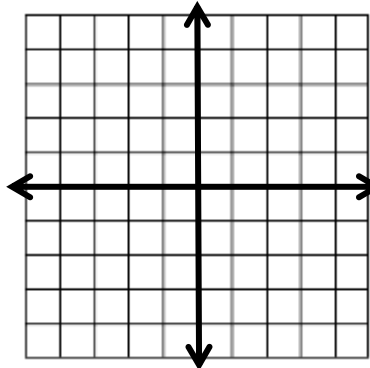


Solution: _____

Check: _____

15. $y = -\frac{1}{2}x - 2$

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

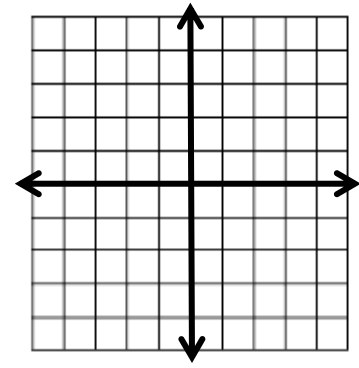


Solution: _____

Check: _____

16. $y = \frac{1}{3}x - 3$

$y - x = 1$



Solution: _____

Check: _____

17. $\begin{cases} y = -5x + 7 \\ 10x + 2y = 5 \end{cases}$ Anna says the system of equations has no solutions. Is she right or wrong? _____

Show your work and explain.