Name _____ Date _____

WORKSHEET 4.18: GRAPHING SYSTEMS OF LINEAR EQUATIONS IF LINES INTERSECT, ARE PARALLEL, OR COINCIDE

Follow the steps below to graph systems of linear equations:

1. Write the equation in slope-intercept form, if necessary.
2. Find the slope and y-intercept of each line.
3. Use the following facts to find the solutions, if any:
   - If the slopes are different and the y-intercepts are different, the lines intersect. There is one solution. It can by found by graphing or solving the system algebraically.
   - If the slopes are the same and the y-intercepts are different, the lines are parallel. There is no solution.
   - If the slopes are the same and the y-intercepts are the same, the lines coincide. There is an infinite number of solutions. Every solution to the system of equations is on the graph of the line.

DIRECTIONS: Solve each system by graphing. Find each solution, if possible, or write "no solution" or an "infinite number of solutions."

1. $y = -x + 4$
$y = -x + 2$

2. $y = 4x + 3$
$y = x - 6$

3. $3y = 6x - 3$
$y = 2x - 1$

4. $y = x$
$y = -x$

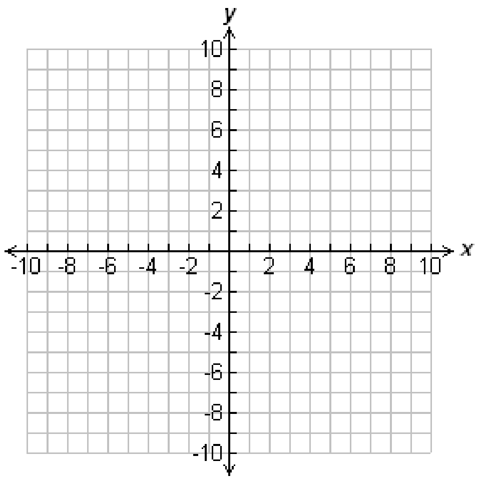
5. $2y = 4x$
$y = 2x + 1$

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

7. $x + y = 8$
$x - y = 4$

8. $4x + 2y = 10$
$y = -2x$

CHALLENGE: Megan said that a system of equations that contains the equations of two lines that have the same slope always has no solution. Do you agree? Explain.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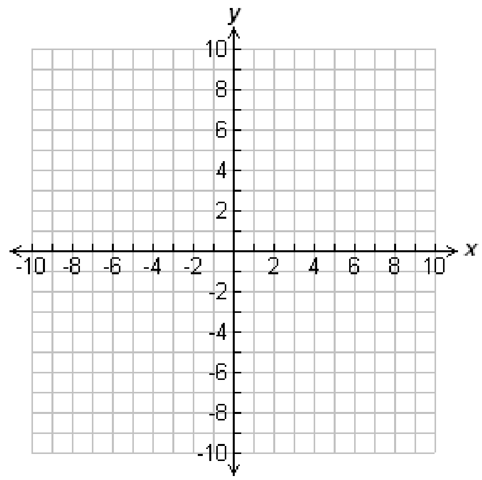
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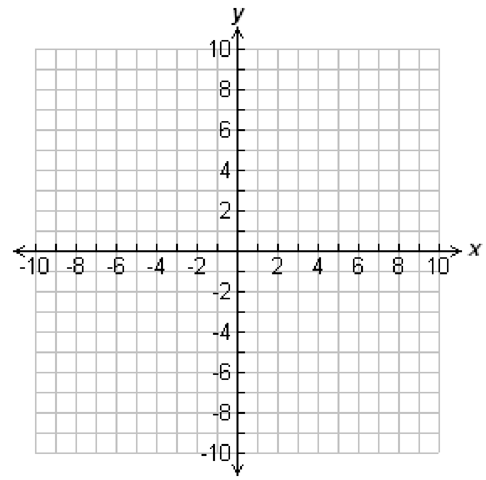
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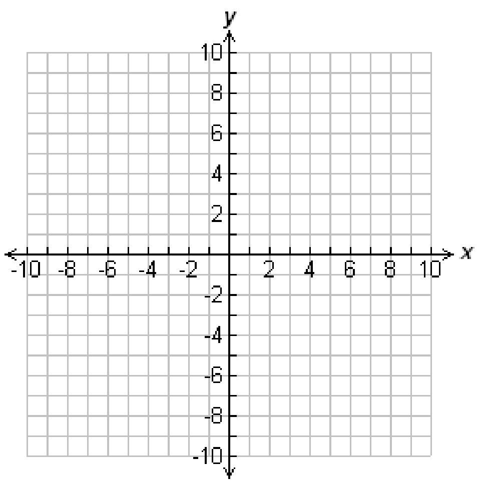
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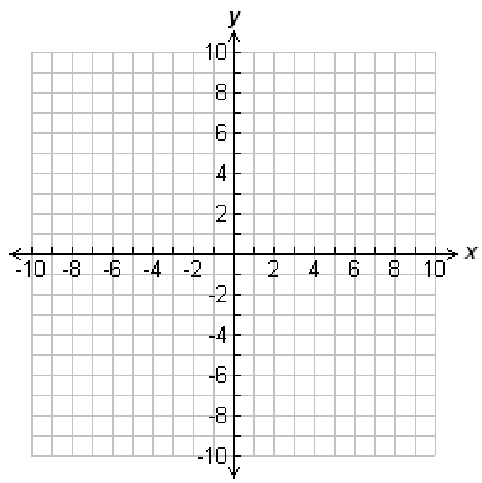
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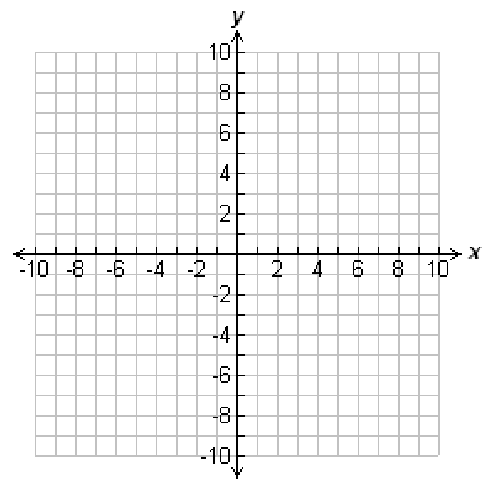
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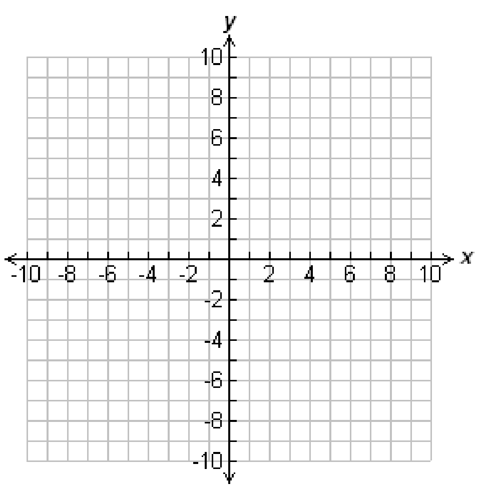
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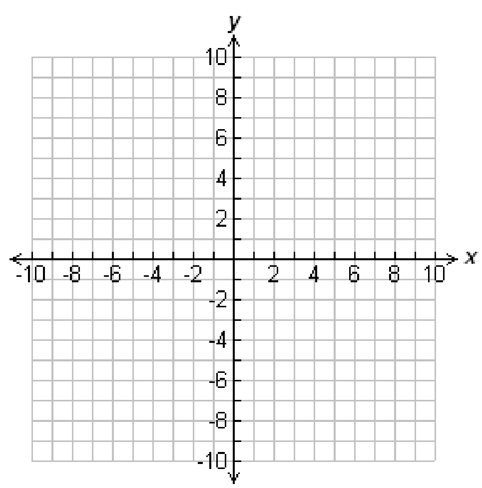
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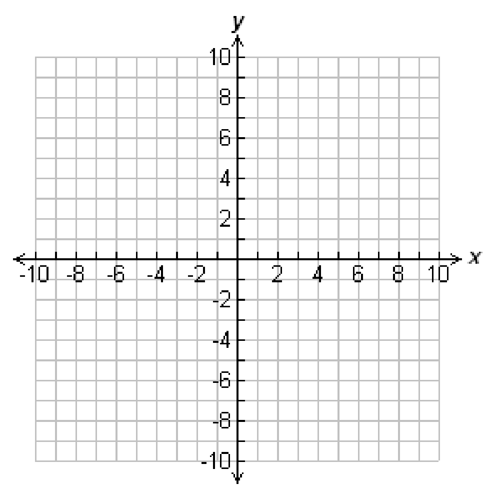
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