

Solving Systems of Equations by Graphing

Name: _____ Date: _____

LEARNING OBJECTIVE

The student will graph two linear equations on the same coordinate plane and identify their point of intersection as the solution to the system.

MATERIALS NEEDED

- graph paper
- ruler
- pencil
- 2 different colored pencils

HANDS-ON ACTIVITY

1. On one graph paper grid, draw x- and y-axes large enough to show values from -5 to 10 on both axes.
2. Using one color, graph the equation $y = x + 2$ by plotting the y-intercept and using the slope to find 2 more points, then draw the line.
3. Using a second color, graph the equation $y = -x + 6$ on the same grid the same way.
4. Find and mark the point where the two lines cross with a large dot, and write its coordinates directly on the graph.
5. Check your solution algebraically: substitute the x and y values from the intersection point into BOTH original equations to confirm they make each equation true.

QUESTIONS

1. At what point (x, y) do the two lines $y = x + 2$ and $y = -x + 6$ intersect?
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2. Show how you checked your solution algebraically in both equations.
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3. What does the intersection point of two lines represent in a system of equations?
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4. If two lines on a graph never cross, what would that mean about the system of equations?
