Appendix

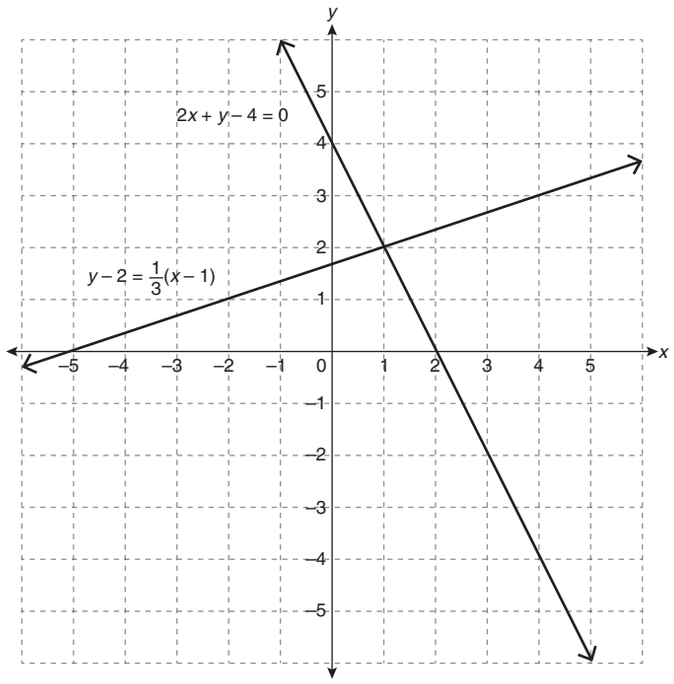
Lesson 8.1: Systems of Linear Equations and Graphs

Practice – I

1. Graph the following system of equations.

   $2x + y - 4 = 0$

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

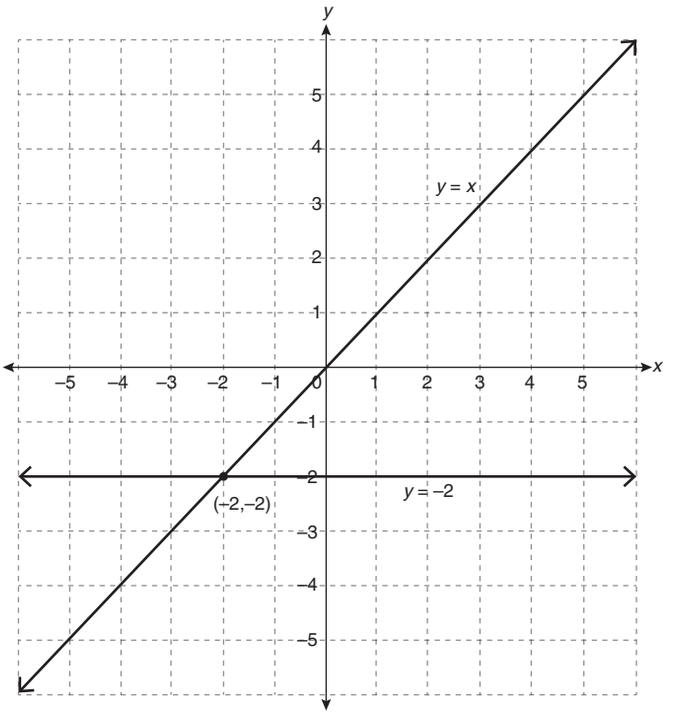


2. Explain what the intersection point of lines represents.

   The intersection point represents the solution to the corresponding system of equations.

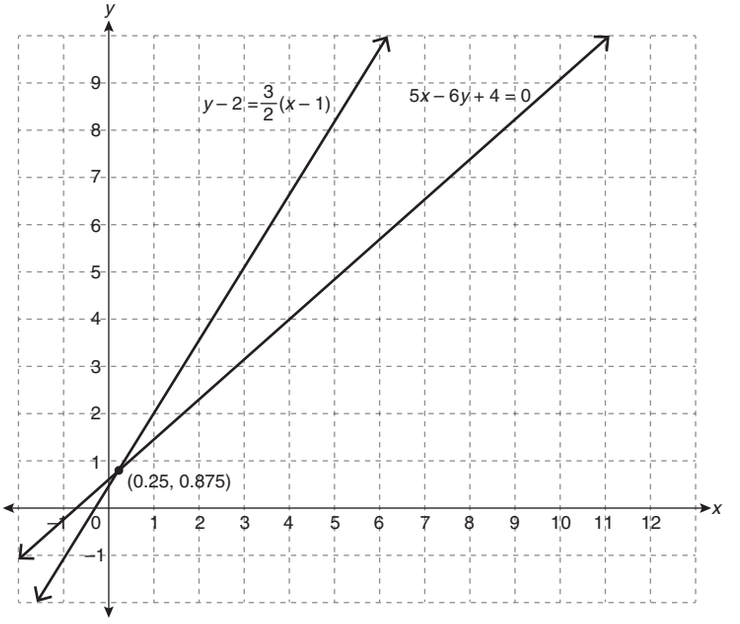
3. Graphically solve each of the following linear systems.

   a. $y = x$ and $y = -2$



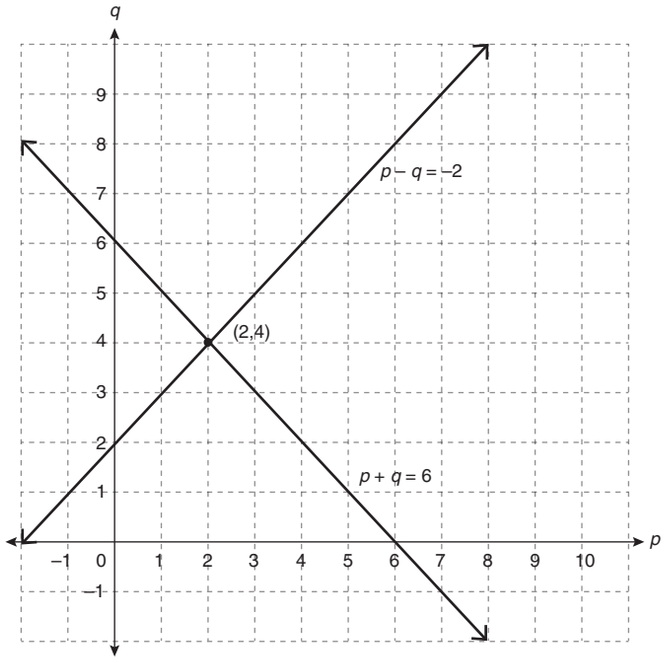
The solution is (–2,–2).

   b. $5x - 6y + 4 = 0$ and $y - 2 = \frac{3}{2}(x - 1)$



The solution is (0.25, 0.875).

c. $p + q = 6$ and $p - q = -2$



The solution is (2,4).

4. Megan was trying to determine whether the point (–3,0) was a solution to the following system of equations.

$y = 6x - 20$

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

She wrote the following and concluded (–3,0) was not a solution.

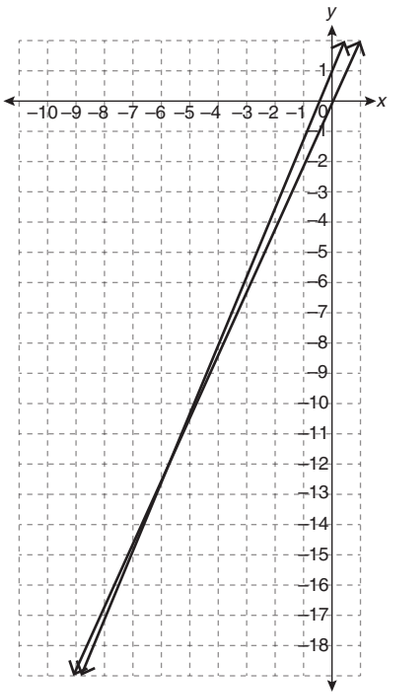
Left Side	Right Side
y	$6x - 20$
0	$6(-3) - 20$
	-38
LS ≠ RS	

Megan then showed her work to Faith, who said it was incomplete because Megan didn't check both equations.

Explain how this discussion could be resolved.

Once it is shown that a solution does not satisfy one of the equations, you know it is not a solution to the system of equations. Megan's work is sufficient.

5. Toby drew the following graph while trying to determine the solution to a linear system of equations.



a. Explain why it is difficult to use Toby's graph to determine a solution to the system of equations.

The lines appear to have a significant overlap, so determining the exact point of intersection is difficult.

b. Suggest an improvement to the graph that will make determining a solution easier.

Suggestions will vary. Toby may be able to see the solution more clearly by adjusting one or both scales of the graph. Toby may also use technology and an intersection command to determine the intersection point.

Please return to *Unit 8: Systems of Linear Equations Lesson 8.1* in the *Module* to continue your exploration.