

Name: KEY

**Learning Target 4 – 1: Solving Systems – Graphing and Addition – V1**

<u>Learning Target</u> <i>(L – T)</i>	<u>Procedural Context</u>
<p>4 – 1</p> <p><b>Solving Systems of Equations Using Graphing and Addition Method</b></p>	<ul style="list-style-type: none"> <li>• Understand how systems of equation have solutions                             <ul style="list-style-type: none"> <li>• Infinite Solutions/One Solution/No Solutions</li> </ul> </li> <li>• Graphing to achieve a result                             <ul style="list-style-type: none"> <li>• Understand how slope and <i>y – intercept</i> relate to potential solutions</li> <li>• Use slope and intercepts to graph accurately</li> </ul> </li> <li>• Use the Addition Method to Solve for Solutions                             <ul style="list-style-type: none"> <li>• How does addition eliminate a variable?</li> <li>• Using multiples to ensure elimination</li> </ul> </li> <li>• Difference between 0 and Infinite Solutions in an equation</li> </ul>

**Self-Reflection**

**For this Learning Target I am feeling:**

**Discuss your work habits leading up to this Check-In:**

**Your Level of Understanding of this Learning Target is:**

**My Feedback:**

**Solve the system of equations by graphing (when a graph is provided) or the Addition Method**

**Emerging Level Questions**

1.  $3x - 2y = 18$  and  $-2x + 4y = -12$

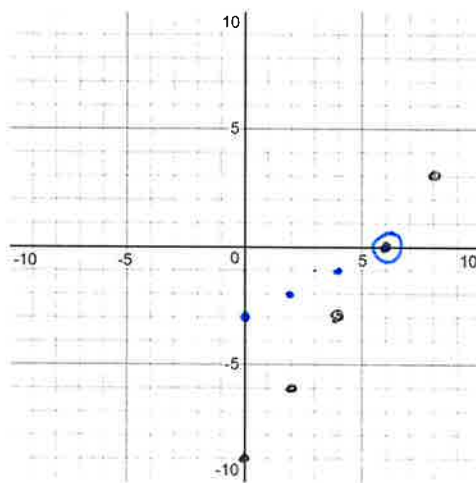
$-2y = -3x + 18$

$y = \frac{3}{2}x - 9$

$4y = 2x - 12$

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

$(6, 0)$



2.  $3x + 9y = 18$  and  $2x + 6y = -24$

$9y = -3x + 18$

$y = -\frac{3}{9}x + 2$

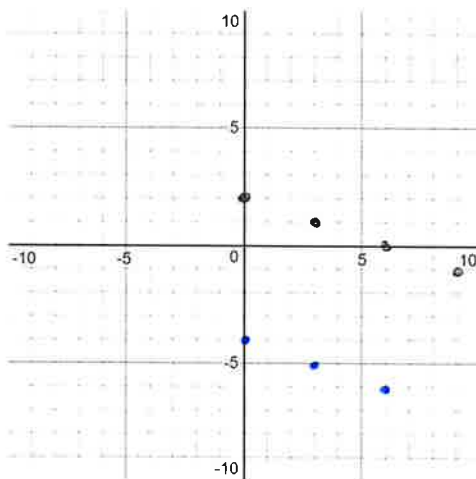
$y = -\frac{1}{3}x + 2$

$6y = -2x - 24$

$y = -\frac{1}{3}x - 4$

Parallel

NO SOLUTION



3. Solve using the Addition Method

$3x + y = 6$  and  $3x + 2y = 3$

$3x + y = 6$

$3x + 2y = 3$

→

$-3x - y = -6$

$3x + 2y = 3$

$y = -3$

$3x + (-3) = 6$

$3x - 3 = 6$

$3x = 9$

$x = 3$

$(3, -3)$

4. Solve using the Addition Method

$$2x - 3y = -4 \quad \text{and} \quad -4x + 6y = -4$$

$$\begin{array}{r} 2x - 3y = -4 \\ -4x + 6y = -4 \\ \hline 0 = -12 \end{array} \rightarrow \begin{array}{r} 4x - 6y = -8 \\ -4x + 6y = -4 \\ \hline 0 = -12 \end{array}$$

NO SOLUTION

**Proficient Level Questions**

5.  $5x + 4y = 12$  and  $x + 3y = -2$

$$4y = -5x + 12$$

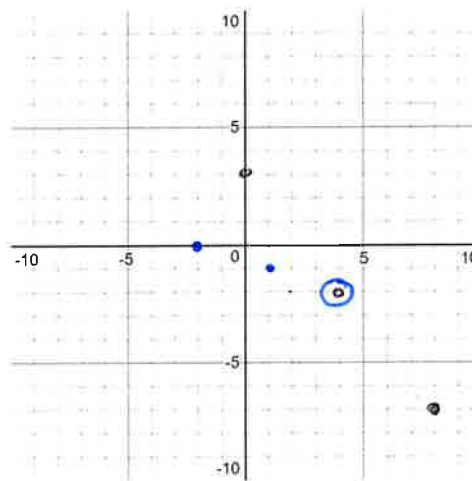
$$3y = -x - 2$$

$$y = -\frac{5}{4}x + 3$$

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

$$(-2, 0)$$

$(4, -2)$



6. If  $(-4, 2)$  is a solution to the following system. Find  $A$  and  $B$

$$Ax - 5y = 2 \quad \text{and} \quad -Ax + By = -8$$

$$-4A - 5(2) = 2$$

$$-(-3)(4) + 2B = -8$$

$$-4A - 10 = 2$$

$$-12 + 2B = -8$$

$$-4A = 12$$

$$2B = \del{20} 4$$

$A = -3$

$B = \del{10} 2$

## Extending Level Questions

$$7. \frac{4}{5}x + \frac{3}{5}y = 1 \text{ and } \frac{3}{8}x - \frac{1}{4}y = 1$$

$$4x + 3y = 5 \quad 3x - 2y = 8$$

$$12x + 9y = 15 \quad -12x + 8y = -32$$

$$\begin{aligned} 12x + 9y &= 15 \\ -12x + 8y &= -32 \end{aligned}$$

$$17y = -17$$

$$y = -1$$

$$4x - 3 = 5$$

$$4x = 8$$

$$x = 2$$

$$\boxed{(2, -1)}$$

$$8. 1.5x - 0.2y = 14 \text{ and } 0.4x + 17y = 89$$

$$15x - 2y = 140 \quad 4x + 170y = 890$$

$$60x - 8y = 560 \quad -60x - 2550y = 13350$$

$$60x - 8y = 560$$

$$-60x - 2550y = 13350$$

$$-2558y = \cancel{13910} - 12790$$

$$\cancel{y = \frac{13910}{2558}} \quad \frac{12790}{2558}$$

$$y = \frac{12790}{2558} = 5$$

$$15x - 2(5) = 140$$

$$15x - 10 = 140$$

$$15x = 150$$

$$x = 10$$

$$\boxed{(10, 5)}$$