



# Algebra 1 Readiness Intervention Lessons

Readiness Standard 2 - 8.EE.7a

**Learning Target:** I will determine the number of solutions to linear equations in one variable

**Readiness for A.REI.6:** Solve systems of linear equations

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## IES Recommendations for Improving Algebra Knowledge:

Recommendation
1. Use solved problems to engage students in analyzing algebraic reasoning and strategies.
2. Teach students to utilize the structure of algebraic representations.
3. Teach students to intentionally choose from alternative algebraic strategies when solving problems.

(Teaching Strategies for Improving Algebra Knowledge in Middle and High School Students, 2015, p. 3)



# High School Planning Guide

Algebra 1 - Readiness Standard 2 - 8.EE.7a

Recommended Actions ≈ 30 minutes	
<b>Beginning</b> (5 min.)	<ul style="list-style-type: none"><li>➤ <b>Review</b> the learning target with the whole group.</li><li>➤ For sessions 3 and 4, ask each student to <b>set a personal goal</b> for the day based on their previous Quick Check Score and use a highlighter to plot their goal on their Growth Chart.</li></ul>
<b>Middle</b> (15 min.)	<ul style="list-style-type: none"><li>➤ <b>Guided Practice</b><ul style="list-style-type: none"><li>○ <b>Whole Group (Analyze solved problems)</b><ul style="list-style-type: none"><li>▪ The teacher covers up all solution steps except the first two.</li><li>▪ The teacher asks, “What math happened?” and elicits student responses to fill in the missing information.</li><li>▪ The teacher answers student questions to clarify the solution step.</li><li>▪ The teacher uncovers the next answer blank and repeats the analysis.</li></ul></li><li>○ <b>Pairs (Gradual release to solve problems)</b><ul style="list-style-type: none"><li>▪ Students take turns leading to “think aloud” while completing each problem.</li></ul></li></ul></li></ul>
<b>End</b> (10 min.)	<ul style="list-style-type: none"><li>➤ <b>Reflect, Assess and Monitor Progress</b><ul style="list-style-type: none"><li>○ Ask students to <b>reflect</b> on their progress towards the learning target.<ul style="list-style-type: none"><li>▪ What did I learn today about the learning target?</li><li>▪ How confident do I feel about doing the learning target on my own?</li></ul></li><li>○ <b>Assess</b> each student’s progress using a Quick Check.</li><li>○ Guide students to <b>self-correct</b> their Quick Check.</li><li>○ Guide students to <b>chart their progress</b> in their Growth Chart.<ul style="list-style-type: none"><li>▪ If not using Delta Math lessons, record the activity in the table.</li></ul></li><li>○ Collect each student’s Quick Check and Growth Chart.</li></ul></li></ul>
<b>After</b>	<ul style="list-style-type: none"><li>➤ <b>Exit</b> students who meet or exceed the learning goal for a third time.</li></ul>

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 1: Guided Practice (Whole Group)

1. Below are steps to find the number of solutions to the equation  $2x + 1 = 3x - 4$ .  
For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$2x + 1 = 3x - 4$ $2x + 1 = 3x + -4$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as                      "Became" or "Changed To"                 </div> <p><b>Changed subtraction to "add the opposite"</b>  <math>3x - 4 \rightarrow \underline{\quad} + \underline{\quad}</math>                      to model the equation with algebra tiles.</p>
	$\underline{-2x} \quad \underline{-2x}$	<p><b>Added <math>-2x</math> to _____ and _____</b>                      to get the terms with the variable                      on one side of the equal sign.</p>
	$1 = x + -4$	<p><b>Removed Zero Pairs</b>  <math>\underline{\quad} + -2x \rightarrow 0</math> and <math>\underline{\quad} + -2x \rightarrow 0</math>                      to simplify the equation.</p>
	$\underline{+4} \quad \underline{+4}$	<p><b>Added 4 to _____ and _____</b>                      to get the term with the variable by itself.</p>
	$5 = x$	<p><b>Removed Zero Pairs</b>  <math>\underline{\quad} + 4 \rightarrow 5</math> and <math>\underline{\quad} + 4 \rightarrow 0</math>                      to simplify the equation.</p>
	<p>One Solution</p>	<p><b>Decided there is One Solution</b>                      because <math>x = \underline{\quad}</math>.</p>
	$2x + 1 = 3x + -4$ $2(5) + 1 = 3(5) + -4$ $10 + 1 = 15 + -4$ $11 = 11$	<p><b>Verified</b> by substituting _____ for <math>x</math>.</p> <p>The left and right sides of the equal sign                      are _____, only when <math>x = \underline{\quad}</math>.</p> <p>How many solutions? _____</p>

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## Session 1: Guided Practice (Whole Group)

2. Below are steps to find the number of solutions to the equation  $2x + 1 = 2x - 1$ . For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$2x + 1 = 2x - 1$ $2x + 1 = 2x + -1$ $\underline{-2x} \quad \underline{-2x}$ $1 \neq -1$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as                      “Became” or “Changed To”                 </div> <p><b>Changed subtraction to “add the opposite”</b>  <math>2x - 1 \rightarrow \underline{\quad} + \underline{\quad}</math>                      to model the equation with algebra tiles.</p> <p><b>Added <math>-2x</math> to <math>\underline{\quad}</math> and <math>\underline{\quad}</math></b>                      to get the terms with the variable                      on one side of the equal sign.</p> <p><b>Removed Zero Pairs</b>  <math>\underline{\quad} + -2x \rightarrow 0</math> and <math>\underline{\quad} + -2x \rightarrow 0</math>                      to simplify the equation.</p>
	<p style="text-align: center;">No Solutions</p> $2x + 1 = 2x + -1$ $2(4) + 1 = 2(4) + -1$ $8 + 1 = 8 + -1$ $9 \neq 7$	<p><b>Decided there are No Solutions</b>                      since the simplified equation is <math>\underline{\quad}</math>.</p> <p>Any number chosen will create a false equation!</p> <p><b>Verified</b> by substituting <math>\underline{\quad}</math> for <math>x</math>.</p> <p>The left and right sides of the equal sign                      are <math>\underline{\quad}</math> when <math>x = \underline{\quad}</math>                      and any other number you try!</p> <p>How many solutions? <math>\underline{\quad}</math></p>



Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

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## Session 1: Guided Practice (Pairs)

**Directions:** Complete the steps to solve each linear equation, find the number of solutions and verify your answer on the graph.

<p><b>3.</b>            <math>3x + 10 = -3x + 10</math></p> <p>                 <math>6x + 10 = \underline{\hspace{2cm}}</math></p> <p>                 <math>6x = \underline{\hspace{2cm}}</math></p> <p>                 <math>x = \underline{\hspace{2cm}}</math></p> <p>                 Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>4.</b>            <math>3x + 10 = 3x - 10</math></p> <p>                 <math>3x + 10 = 3x + -10</math></p> <p>                 <math>10 \neq \underline{\hspace{2cm}}</math></p> <p>                 Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>
<p><b>5.</b>            <math>4x + 1 = 2(2x + 3)</math></p> <p>                 <math>4x + 1 = 4x + \underline{\hspace{2cm}}</math></p> <p>                 <math>1 \neq \underline{\hspace{2cm}}</math></p> <p>                 Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>6.</b>            <math>6x - 4 = 2(2x + 1)</math></p> <p>                 <math>6x + \underline{\hspace{2cm}} = 2(2x + 1)</math></p> <p>                 <math>6x + -4 = 4x + \underline{\hspace{2cm}}</math></p> <p>                 <math>2x = \underline{\hspace{2cm}}</math></p> <p>                 <math>x = \underline{\hspace{2cm}}</math></p> <p>                 Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>
<p><b>7.</b>            <math>3x + 2 = 2x + 1 - 5x + 7</math></p> <p>                 <math>3x + 2 = 2x + 1 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}</math></p> <p>                 <math>3x + 2 = -3x + \underline{\hspace{2cm}}</math></p> <p>                 <math>6x + 2 = \underline{\hspace{2cm}}</math></p> <p>                 <math>6x = \underline{\hspace{2cm}}</math></p> <p>                 <math>x = \underline{\hspace{2cm}}</math></p> <p>                 Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>8.</b>            <math>3x - 5 + x = 5 + 4x - 4</math></p> <p>                 <math>3x + -5 + x = 5 + 4x + \underline{\hspace{2cm}}</math></p> <p>                 <math>4x + -5 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}</math></p> <p>                 <math>-5 \neq \underline{\hspace{2cm}}</math></p> <p>                 Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>

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**Readiness** for solving systems of linear equations

## Session 1: Guided Practice (Teacher Notes)

1. Below are steps to find the number of solutions to the equation  $2x + 1 = 3x - 4$ .  
For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$2x + 1 = 3x - 4$ $2x + 1 = 3x + -4$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as "Became" or "Changed To"                 </div> <p><b>Changed subtraction to "add the opposite"</b>  <math>3x - 4 \rightarrow 3x + -4</math>                      to model the equation with algebra tiles.</p>
	$\underline{-2x} \quad \underline{-2x}$	<p><b>Added <math>-2x</math> to <math>2x</math> and <math>3x</math></b> to get the terms with the variable on one side of the equal sign.</p>
	$1 = x + -4$	<p><b>Removed Zero Pairs</b>  <math>2x + -2x \rightarrow 0</math> and <math>3x + -2x \rightarrow 0</math>                      to simplify the equation.</p>
	$\underline{+4} \quad \underline{+4}$	<p><b>Added 4 to <math>1</math> and <math>-4</math></b> to get the term with the variable by itself.</p>
	$5 = x$	<p><b>Removed Zero Pairs</b>  <math>1 + 4 \rightarrow 5</math> and <math>-4 + 4 \rightarrow 0</math>                      to simplify the equation.</p>
	<p>One Solution</p>	<p><b>Decided there is One Solution</b> since the simplified equation is <math>x = \underline{5}</math>.</p>
	$2x + 1 = 3x + -4$ $2(5) + 1 = 3(5) + -4$ $10 + 1 = 15 + -4$ $11 = 11$	<p><b>Verified</b> by substituting <math>\underline{5}</math> for <math>x</math>.</p> <p>The left and right sides of the equal sign are <b>equal</b>, only when <math>x = \underline{5}</math>.</p> <p>How many solutions? <b>One</b></p>

**Learning Target:** I will determine the number of solutions to linear equations in one variable

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**Readiness** for solving systems of linear equations

## Session 1: Guided Practice (Teacher Notes – Cont.)

2. Below are steps to find the number of solutions to the equation  $2x + 1 = 2x - 1$ .  
For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$2x + 1 = 2x - 1$ $2x + 1 = 2x + -1$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as                      “Became” or “Changed To”                 </div> <p><b>Changed subtraction to “add the opposite”</b>  <math>2x - 1 \rightarrow 2x + -1</math>                      to model the equation with algebra tiles.</p>
	$\underline{-2x} \quad \underline{-2x}$	<p><b>Added <math>-2x</math> to <math>2x</math> and <math>2x</math></b>                      to get the terms with the variable                      on one side of the equal sign.</p>
	$1 \neq -1$	<p><b>Removed Zero Pairs</b>  <math>2x + -2x \rightarrow 0</math> and <math>2x + -2x \rightarrow 0</math>                      to simplify the equation.</p>
	<p>No Solutions</p>  $2x + 1 = 2x + -1$ $2(4) + 1 = 2(4) + -1$ $8 + 1 = 8 + -1$ $9 \neq 7$	<p><b>Decided there are No Solutions</b>                      since the simplified equation is <b>not true</b>.</p> <p>Any number chosen will create a false equation!</p>  <p><b>Verified</b> by substituting <b>4</b> for <math>x</math>.</p> <p>The left and right sides of the equal sign                      are <b>not equal</b> when <math>x = 4</math>                      and any other number you try!</p> <p>How many solutions? <b>None</b></p>





# Session 1: Self-Reflection

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Briefly discuss student responses

- What did I learn today about determining the number of solutions to linear equations in one variable?
  
- How confident do I feel about determining the number of solutions to linear equations in one variable on my own?  
*(Thumbs up, down, or sideways)*



# Algebra 1 Quick Check – Form A

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $2x + 8 = -2x + 8$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $6x - 2 = 6x + 2$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $5x + 6 = 5x + 6$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $3x + 9 = -2x - 9 - x$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $2x + 6 = 2(x + 3)$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $6x + 3 = 3(2x + 1) + 1$ <p>No Solutions   One Solution   Infinitely Many</p>



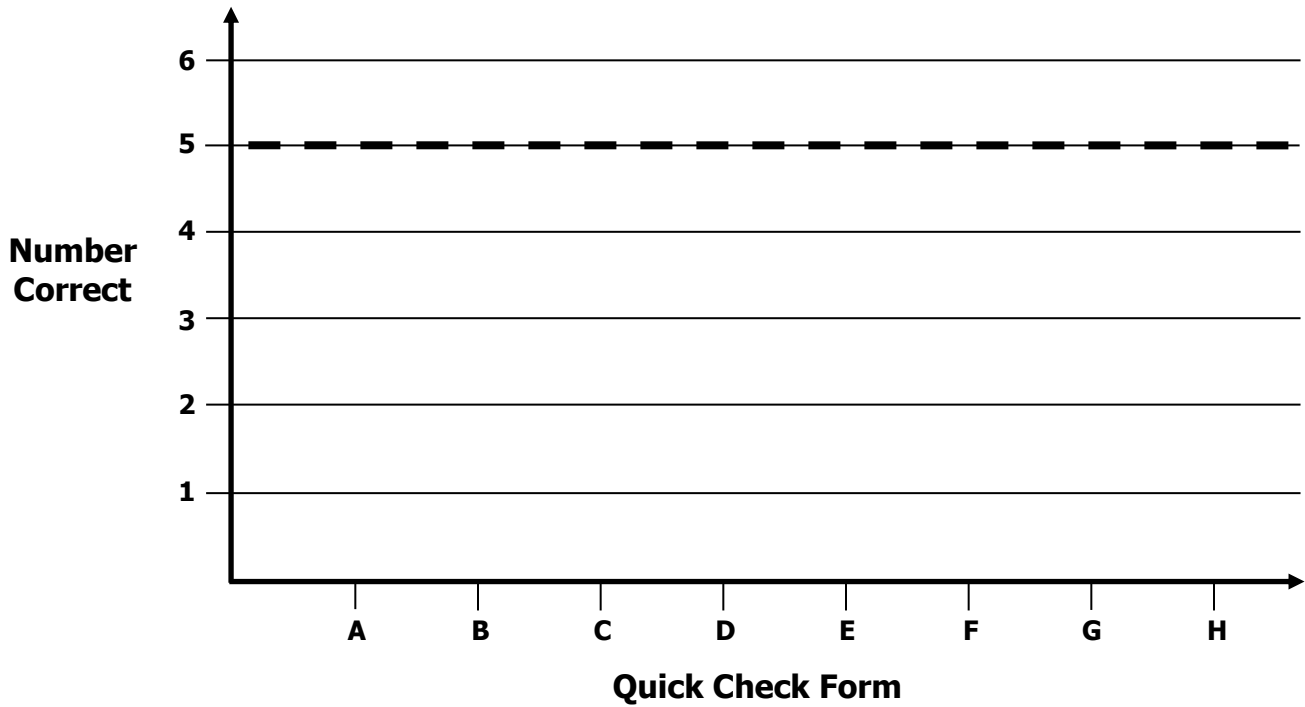
# Algebra 1 Growth Chart

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Goal:** 5 out of 6 correct



Intervention	Date	Score
Session 1		
Session 2		
Session 3		
Session 4		
Session 5		
Session 6		
Session 7		
Session 8		

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 2: Guided Practice (Whole Group)

1. Below are steps to find the number of solutions to the equation  $3x + 4 = 3x - 4$ .  
For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$3x + 1 = 3x - 2$ $3x + 1 = 3x + -2$ $\underline{-3x} \quad \underline{-3x}$ $1 \neq -2$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">→ can be read as "Became" or "Changed To"</p> </div> <p><b>Changed subtraction to "add the opposite"</b>  <math>3x - 2 \rightarrow \underline{\quad} + \underline{\quad}</math>                      to model the equation with algebra tiles.</p> <p><b>Added <math>-3x</math> to <math>\underline{\quad}</math> and <math>\underline{\quad}</math></b>                      to get the terms with the variable                      on one side of the equal sign.</p> <p style="text-align: center;"><b>Removed Zero Pairs</b></p> <p><math>\underline{\quad} + -3x \rightarrow 0</math> and <math>\underline{\quad} + -3x \rightarrow 0</math>                      to simplify the equation.</p>
	<p style="text-align: center;">No Solutions</p> $3x + 1 = 3x + -2$ $3(-4) + 1 = 3(-4) + -2$ $-12 + 1 = -12 + -2$ $-11 \neq -14$	<p style="text-align: center;"><b>Decided there are No Solutions</b>                      since the simplified equation is <math>\underline{\quad}</math>.</p> <p>Any number chosen will create a false equation!</p> <p style="text-align: center;"><b>Verified</b> by substituting <math>\underline{\quad}</math> for <math>x</math>.</p> <p>The left and right sides of the equal sign                      are <math>\underline{\quad}</math> when <math>x = \underline{\quad}</math>                      and any other number you try!</p> <p>How many solutions? <math>\underline{\quad}</math></p>

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 2: Guided Practice (Whole Group)

2. Below are steps to find the number of solutions to the equation  $2x + 1 = 3x - 3 - x + 4$ . For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$2x + 1 = 3x - 3 - x + 4$ $2x + 1 = 3x + -3 + -x + 4$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as "Became" or "Changed To"                 </div> <p><b>Changed subtraction to "add the opposite"</b>  <math>3x - 3 - x + 4 \rightarrow \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}</math>                      to model the equation with algebra tiles.</p>
	$2x + 1 = 3x + -x + -3 + 4$	<p><b>Reordered the Terms</b>  <math>3x + -3 + -x + 4 \rightarrow \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}</math>                      to get like terms together.</p>
	$2x + 1 = 2x + 1$	<p><b>Combined Like Terms</b>  <math>\underline{\quad} + \underline{\quad} \rightarrow 2x</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow 1</math>                      to simplify the equation.</p>
	$\underline{-2x} \quad \underline{-2x}$	<p><b>Added -2x to</b> <math>\underline{\quad}</math> and <math>\underline{\quad}</math>                      to get the terms with the variable on one side of the equal sign.</p>
	$1 = 1$	<p><b>Removed Zero Pairs</b>  <math>\underline{\quad} + -2x \rightarrow 0</math> and <math>\underline{\quad} + -2x \rightarrow 0</math>                      to simplify the equation.</p>
	<p style="text-align: center;">Infinitely Many Solutions</p>	<p><b>Decided there are No Solutions</b>                      since the simplified equation is <math>\underline{\hspace{2cm}}</math>.                      Any number chosen will create a true equation.</p>
	$2x + 1 = 3x + -3 + -x + 4$ $2(7) + 1 = 3(7) + -3 + -(7) + 4$ $14 + 1 = 21 + -3 + -7 + 4$ $15 = 15$	<p><b>Verified</b> by substituting <math>\underline{\quad}</math> for <math>x</math>.                      The left and right sides of the equal sign are <math>\underline{\hspace{2cm}}</math> when <math>x = \underline{\quad}</math> and any other number you try.</p> <p>How many solutions? <math>\underline{\hspace{2cm}}</math></p>



Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

## Session 2: Guided Practice (Pairs)

**Directions:** Complete the steps to solve each linear equation, find the number of solutions.

<p><b>3.</b> <math>4x + 7 = 4x - 9</math></p> <p><math>4x + 7 = 4x + \underline{\hspace{2cm}}</math></p> <p><math>7 \neq \underline{\hspace{2cm}}</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>4.</b> <math>-5x + 17 = 5x - 3</math></p> <p><math>-5x + 17 = 5x + -3</math></p> <p><math>17 = 10x + \underline{\hspace{2cm}}</math></p> <p><math>\underline{\hspace{2cm}} = 10x</math></p> <p><math>\underline{\hspace{2cm}} = x</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>
<p><b>5.</b> <math>6x - 4 = 2(3x - 2)</math></p> <p><math>6x + -4 = 2(3x + \underline{\hspace{2cm}})</math></p> <p><math>6x + -4 = 6x + \underline{\hspace{2cm}}</math></p> <p><math>-4 = \underline{\hspace{2cm}}</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>6.</b> <math>4x - 6 = 2(2x + 1)</math></p> <p><math>4x + \underline{\hspace{2cm}} = 2(2x + 1)</math></p> <p><math>4x + -6 = 4x + \underline{\hspace{2cm}}</math></p> <p><math>-6 \neq 2</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>
<p><b>7.</b> <math>3x - 5 + x = 5 + 2x - 4</math></p> <p><math>3x + -5 + x = 5 + 2x + \underline{\hspace{2cm}}</math></p> <p><math>4x + -5 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}</math></p> <p><math>2x + -5 = \underline{\hspace{2cm}}</math></p> <p><math>2x = \underline{\hspace{2cm}}</math></p> <p><math>x = \underline{\hspace{2cm}}</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>8.</b> <math>3x - 5 + x = 2 + 4x - 7</math></p> <p><math>3x + -5 + x = 2 + 4x + \underline{\hspace{2cm}}</math></p> <p><math>4x + -5 = \underline{\hspace{2cm}} + \underline{\hspace{2cm}}</math></p> <p><math>-5 = \underline{\hspace{2cm}}</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>

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Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 2: Guided Practice (Teacher Notes)

1. Below are steps to find the number of solutions to the equation  $3x + 1 = 3x - 2$ .  
For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$3x + 1 = 3x - 2$ $3x + 1 = 3x + -2$ $\underline{-3x} \quad \underline{-3x}$ $1 \neq -2$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as                      “Became” or “Changed To”                 </div> <p><b>Changed subtraction to “add the opposite”</b>  <math>3x - 2 \rightarrow 3x + -2</math>                      to model the equation with algebra tiles.</p> <p><b>Added <math>-3x</math> to <math>3x</math> and <math>3x</math></b>                      to get the terms with the variable                      on one side of the equal sign.</p> <p><b>Removed Zero Pairs</b>  <math>3x + -3x \rightarrow 0</math> and <math>3x + -3x \rightarrow 0</math>                      to simplify the equation.</p>
	<p style="text-align: center;">No Solutions</p> $3x + 1 = 3x + -2$ $3(-4) + 1 = 3(-4) + -2$ $-12 + 1 = -12 + -2$ $-11 \neq -14$	<p><b>Decided there are No Solutions</b>                      since the simplified equation is <b>false</b>.</p> <p>Any number chosen will create a false equation!</p> <p><b>Verified</b> by substituting <b>-4</b> for <math>x</math>.</p> <p>The left and right sides of the equal sign                      are <b>not equal</b> when <math>x = -4</math>                      and any other number you try!</p> <p>How many solutions? <b>None</b></p>

**Learning Target:** I will determine the number of solutions to linear equations in one variable

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**Readiness** for solving systems of linear equations

## Session 2: Guided Practice (Teacher Notes – Cont.)

2. Below are steps to find the number of solutions to the equation  $2x + 1 = 3x - 3 - x + 4$ . For each solution step, discuss what happened and fill in the missing information.

Draw	Write	Describe
	$2x + 1 = 3x - 3 - x + 4$ $2x + 1 = 3x + -3 + -x + 4$	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">                 → can be read as                  “Became” or “Changed To”             </div> <p><b>Changed subtraction to “add the opposite”</b>  <math>3x - 3 - x + 4 \rightarrow 3x + -3 + -x + 4</math>                  to model the equation with algebra tiles.</p>
	$2x + 1 = 3x + -x + -3 + 4$	<p><b>Reordered the Terms</b>  <math>3x + -3 + -x + 4 \rightarrow 3x + -x + -3 + 4</math>                  to get like terms together.</p>
	$2x + 1 = 2x + 1$	<p><b>Combined Like Terms</b>  <math>3x + -x \rightarrow 2x</math> and <math>-3 + 4 \rightarrow 1</math>                  to simplify the equation.</p>
	$\underline{-2x} \quad \underline{-2x}$	<p><b>Added <math>-2x</math> to <math>2x</math> and <math>2x</math></b>                  to get the terms with the variable on one side of the equal sign.</p>
	$1 = 1$	<p><b>Removed Zero Pairs</b>  <math>2x + -2x \rightarrow 0</math> and <math>2x + -2x \rightarrow 0</math>                  to simplify the equation.</p>
	<p style="text-align: center;">Infinitely Many Solutions</p>	<p><b>Decided there are Infinitely Many Solutions</b>                  since the simplified equation is <u>true</u>.                  Any number chosen will create a true equation!</p>
	$2x + 1 = 3x + -3 + -x + 4$ $2(7) + 1 = 3(7) + -3 + -(7) + 4$ $14 + 1 = 21 + -3 + -7 + 4$ $15 = 15$	<p><b>Verified</b> by substituting <u>7</u> for <math>x</math>.                  The left and right sides of the equal sign are <u>equal</u> when <math>x = 7</math> and any other number you try!</p> <p>How many solutions? <b>Infinitely Many Solutions</b></p>





## Session 2: Self-Reflection

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Briefly discuss student responses

- What did I learn today about determining the number of solutions to linear equations in one variable?
  
- How confident do I feel about determining the number of solutions to linear equations in one variable on my own?  
*(Thumbs up, down, or sideways)*



# Algebra 1 Quick Check – Form B

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $8x + 2 = 8x - 2$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $3x - 6 = -3x + 6$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $4x - 6 = x - 2 + x - 4$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $3x + 1 = 3x + 1$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $2x + 8 = 2(x + 3) + 1$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $5x + 6 = 2(2x + 4)$ <p>No Solutions   One Solution   Infinitely Many</p>



**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 3: Guided Practice (Whole Group)

**Directions:** Below are steps to find the number of solutions to  $2x + 5 = 6x + 4 - 2x - 5$ . For each solution step, discuss what happened and fill in the missing information.

Write	Describe
<p>1. <math>2x + 5 = 6x + 4 - 2x - 5</math></p> $2x + 5 = 6x + 4 + -2x + -5$ $2x + 5 = 4x + -1$ $\underline{-2x} \quad \underline{-2x}$ $5 = 2x + -1$ $\underline{+1} \quad \underline{+1}$ $6 = 2x$ $\underline{\quad} \quad \underline{\quad}$ $3 = x$ <p>One Solution</p>	<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <p>→ can be read as "Became" or "Changed To"</p> </div> <p><b>Changed to Addition</b> <math>6x + 4 - 2x - 5 \rightarrow \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}</math> to make it easier to combine like terms.</p> <p><b>Combined Like Terms</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 4x</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow -1</math> to simplify the expression.</p> <p><b>Added</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow 2x</math> to eliminate the term with the variable on one side of the equal sign.</p> <p><b>Added</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 6</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> to get the term with the variable by itself.</p> <p><b>Divided</b> <math>\underline{\quad} \div \underline{\quad} \rightarrow 3</math> and <math>\underline{\quad} \div \underline{\quad} \rightarrow x</math> to find the value.</p> <p><b>Decided</b> The number of solutions is _____, since the simplified equation is <math>x = \underline{\quad}</math>.</p>



**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 3: Guided Practice (Whole Group – Cont.)

Write	Describe
<p>2. <math>6x + 15 = 3(2x + 5)</math></p> $6x + 12 = 6x + 15$ $\underline{-6x} \quad \underline{-6x}$ $12 \neq 15$  <p>No Solutions</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px; text-align: center;"> <math>\rightarrow</math> can be read as  <i>"Became" or "Changed To"</i> </div> <p><b>Multiplied</b> _____ <math>\cdot</math> _____ <math>\rightarrow 6x</math> and _____ <math>\cdot</math> _____ <math>\rightarrow 15</math> to eliminate the parentheses.</p> <p><b>Added and Compared</b> _____ + _____ <math>\rightarrow 0</math> and _____ + _____ <math>\rightarrow 0</math> 12 and 15 are _____ to eliminate the term with the variable on one side of the equal sign and check for equality.</p> <p><b>Decided</b> The number of solutions is _____, since the simplified equation is _____.</p>
<p>3. <math>5x + 15 = 8x + 7 - 3x + 8</math></p> $5x + 15 = 8x + 7 + -3x + 8$ $5x + 15 = 5x + 15$ $\underline{-5x} \quad \underline{-5x}$ $15 = 15$  <p>Infinitely Many Solutions</p>	<p><b>Changed to Addition</b> <math>8x + 7 - 3x + 8 \rightarrow</math> _____ + _____ + _____ + _____ to make it easier to combine like terms.</p> <p><b>Combined Like Terms</b> _____ + _____ <math>\rightarrow 5x</math> and _____ + _____ <math>\rightarrow 15</math> to simplify the expression.</p> <p><b>Added and Compared</b> _____ + _____ <math>\rightarrow 0</math> and _____ + _____ <math>\rightarrow 2x</math> 15 and 15 are _____ to eliminate the term with the variable on one side.</p> <p><b>Decided</b> The number of solutions is _____, since the simplified equation is _____.</p>



Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

## Session 3: Guided Practice (Pairs)

**Directions:** Complete the steps to solve each linear equation and find the number of solutions.

<p><b>4.</b>            <math>4x + 3 = -4x + 3</math></p> <p><math>8x + 3 = \underline{\hspace{2cm}}</math></p> <p><math>\underline{\hspace{2cm}} = \underline{\hspace{2cm}}</math></p> <p><math>x = \underline{\hspace{2cm}}</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>5.</b>            <math>7x + 5 = 7x - 5</math></p> <p><math>7x + 5 = 7x + \underline{\hspace{2cm}}</math></p> <p><math>5 \neq \underline{\hspace{2cm}}</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>
<p><b>6.</b>            <math>5x + 4 = 2(3x + 1)</math></p> <p><math>5x + 4 = 6x + \underline{\hspace{2cm}}</math></p> <p><math>4 = x + \underline{\hspace{2cm}}</math></p> <p><math>\underline{\hspace{2cm}} = x</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>7.</b>            <math>4x - 12 = 4(x - 3)</math></p> <p><math>4x + -12 = 4(\underline{\hspace{2cm}} + \underline{\hspace{2cm}})</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>
<p><b>8.</b>            <math>2x + 6 = 5x + 20 - 7x - 2</math></p> <p><math>2x + 6 = 5x + 20 + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>	<p><b>9.</b>            <math>2x - 6 + x = 5 - 2x + 9</math></p> <p>Number of Solutions = <math>\underline{\hspace{2cm}}</math></p>



Name \_\_\_\_\_

Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 3: Guided Practice (Teacher Notes)

**Directions:** Below are steps to find the number of solutions to  $2x + 5 = 6x + 4 - 2x - 5$ . For each solution step, discuss what happened and fill in the missing information.

Write	Describe
<p>1. <math>2x + 5 = 6x + 4 - 2x - 5</math></p> <p><math>2x + 5 = 6x + 4 + -2x + -5</math></p> <p><math>2x + 5 = 4x + -1</math></p> <p><math>\underline{-2x} \quad \underline{-2x}</math></p> <p><math>5 = 2x + -1</math></p> <p><math>\underline{+1} \quad \underline{+1}</math></p> <p><math>6 = 2x</math></p> <p><math>\underline{2} \quad \underline{2}</math></p> <p><math>3 = x</math></p> <p>One Solution</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px; text-align: center;"> <math>\rightarrow</math> can be read as  <i>“Became”, “Changed To”, “To Get”</i> </div> <p><b>Changed to Addition</b> <math>6x + 4 - 2x - 5 \rightarrow \underline{6x} + \underline{4} + \underline{-2x} + \underline{-5}</math> to make it easier to combine like terms.</p> <p><b>Combined Like Terms</b> <math>\underline{6x} + \underline{-2x} \rightarrow 4x</math> and <math>\underline{4} + \underline{-5} \rightarrow -1</math> to simplify the expression.</p> <p><b>Added</b> <math>\underline{2x} + \underline{-2x} \rightarrow 0</math> and <math>\underline{4x} + \underline{-2x} \rightarrow 2x</math> to get the term with the variable on one side of the equal sign.</p> <p><b>Added</b> <math>\underline{5} + \underline{1} \rightarrow 6</math> and <math>\underline{-1} + \underline{1} \rightarrow 0</math> to eliminate the term with the variable on one side of the equal sign.</p> <p><b>Divided</b> <math>\underline{6} \div \underline{2} \rightarrow 3</math> and <math>\underline{2x} \div \underline{2} \rightarrow x</math> to find the value of <math>x</math>.</p> <p><b>Decided</b> The number of solutions is <u>one</u>, since the simplified equation is <math>x = \underline{3}</math>.</p>



Name \_\_\_\_\_

Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 3: Guided Practice (Teacher Notes – Cont.)

Write	Describe
<p>2. <math>6x + 15 = 3(2x + 5)</math></p> $6x + 12 = 6x + 15$ $\underline{-6x} \quad \underline{-6x}$ $12 \neq 15$ <p>No Solutions</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as  <i>“Became”, “Changed To”, “To Get”</i> </div> <p><b>Multiplied</b> <math>\underline{3} \cdot \underline{2x} \rightarrow 6x</math> and <math>\underline{3} \cdot \underline{5} \rightarrow 15</math> to eliminate the parentheses.</p> <p><b>Added and Compared</b> <math>\underline{6x} + \underline{-6x} \rightarrow 0</math> and <math>\underline{6x} + \underline{-6x} \rightarrow 0</math> 12 and 15 are <b><u>not equal</u></b> to eliminate the term with the variable on one side of the equal sign and check for equality.</p> <p><b>Decided</b> The number of solutions is <b><u>Zero</u></b>, since the simplified equation is <b><u>false</u></b>.</p>
<p>3. <math>5x + 15 = 8x + 7 - 3x + 8</math></p> $5x + 15 = 8x + 7 + -3x + 8$ $5x + 15 = 5x + 15$ $\underline{-5x} \quad \underline{-5x}$ $15 = 15$ <p>Infinitely Many Solutions</p>	<p><b>Changed to Addition</b> <math>8x + 7 - 3x + 8 \rightarrow \underline{8x} + \underline{7} + \underline{-3x} + \underline{8}</math> to make it easier to combine like terms.</p> <p><b>Combined Like Terms</b> <math>\underline{8x} + \underline{-3x} \rightarrow 5x</math> and <math>\underline{7} + \underline{8} \rightarrow 15</math> to simplify the expression.</p> <p><b>Added and Compared</b> <math>\underline{5x} + \underline{-5x} \rightarrow 0</math> and <math>\underline{5x} + \underline{-5x} \rightarrow 0</math> 15 and 15 are <b><u>equal</u></b> to eliminate the term with the variable on one side of the equal sign and check for equality.</p> <p><b>Decided</b> The number of solutions is <b><u>Infinitely Many</u></b>, since the simplified equation is <b><u>true</u></b>.</p>



## Session 3: Self-Reflection

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Briefly discuss student responses

- What did I learn today about determining the number of solutions to linear equations in one variable?
  
- How confident do I feel about determining the number of solutions to linear equations in one variable on my own?  
*(Thumbs up, down, or sideways)*





# Algebra 1 Quick Check – Form C

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $3x + 4 = -3x + 10$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $4x - 1 = 4x - 1$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $5x + 1 = 3x + 1 + 2x$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $2x + 4 = -2x - 4$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $8x + 5 = 4(2x + 1) + 1$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $6x + 4 = 2(3x + 4)$ <p>No Solutions   One Solution   Infinitely Many</p>



**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 4: Guided Practice (Whole Group)

**Directions:** Below are steps to find the number of solutions to  $3x + 6 = 6x + 7 - 2x - 4$ . For each solution step, discuss what happened and fill in the missing information.

Write	Describe
<p>1. <math>3x + 6 = 6x + 7 - 2x - 4</math></p> <p><math>3x + 6 = 6x + 7 + -2x + -4</math></p> <p><math>3x + 6 = 4x + 3</math></p> <p><math>\underline{-3x} \quad \underline{-3x}</math></p> <p><math>6 = x + 3</math></p> <p><math>\underline{-3} \quad \underline{-3}</math></p> <p><math>3 = x</math></p> <p>One Solution</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px; text-align: center;"> <math>\rightarrow</math> can be read as  <i>“Became” or “Changed To”</i> </div> <p><b>Changed to Addition</b> <math>6x + 7 - 2x - 4 \rightarrow \underline{\quad} + \underline{\quad} + \underline{\quad} + \underline{\quad}</math> to make it easier to combine like terms.</p> <p><b>Combined Like Terms</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 4x</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow 3</math> to simplify the expression.</p> <p><b>Added</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow x</math> to eliminate the term with the variable on one side of the equal sign.</p> <p><b>Added</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 3</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> to get the term with the variable by itself.</p> <p><b>Decided</b> The number of solutions is _____, since the simplified equation is <math>x = \underline{\quad}</math>.</p>



**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 4: Guided Practice (Whole Group – Cont.)

Write	Describe
<p>2. <math>-2x + 10 = -2(x - 5)</math></p> <p><math>-2x + 10 = -2(x + -5)</math></p> <p><math>-2x + 10 = -2x + 10</math></p> <p><u>2x</u>                      <u>2x</u></p> <p><math>10 = 10</math></p> <p>Infinitely Many Solutions</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>→ can be read as "Became" or "Changed To"</p> </div> <p><b>Changed to Addition</b> <math>-2(x - 5) \rightarrow -2(\underline{\quad} + \underline{\quad})</math> to make it easier to combine like terms.</p> <p><b>Multiplied</b> <math>\underline{\quad} \cdot \underline{\quad} \rightarrow -2x</math> and <math>\underline{\quad} \cdot \underline{\quad} \rightarrow 10</math> to eliminate the parentheses.</p> <p><b>Added and Compared</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> 10 and 10 are _____ to eliminate the term with the variable on one side of the equal sign and check for equality.</p> <p><b>Decided</b> The number of solutions is _____, since the simplified equation is _____.</p>
<p>3. <math>-2x + 10 = -2(x + 5)</math></p> <p><math>-2x + 10 = -2x + -10</math></p> <p><u>2x</u>                      <u>2x</u></p> <p><math>10 \neq -10</math></p> <p>No Solutions</p>	<p><b>Multiplied</b> <math>\underline{\quad} \cdot \underline{\quad} \rightarrow -2x</math> and <math>\underline{\quad} \cdot \underline{\quad} \rightarrow -10</math> to eliminate the parentheses.</p> <p><b>Added and Compared</b> <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> and <math>\underline{\quad} + \underline{\quad} \rightarrow 0</math> 10 and -10 are _____ to eliminate the term with the variable on one side.</p> <p><b>Decided</b> The number of solutions is _____, since the simplified equation is _____.</p>



Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

## Session 4: Guided Practice (Pairs)

**Directions:** Solve each linear equation and find the number of solutions.

4. $2x + 6 = 6x - 6$	5. $3x + 8 = 3x - 8$
6. $8x + 6 = 2(4x + 6)$	7. $2x - 6 = 2(x - 3)$
8. $4x + 2 = x + 2 + x + 6$	9. $5x + 2 = -2x + 6 + 7x - 4$



Name \_\_\_\_\_

Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 4: Guided Practice (Teacher Notes)

**Directions:** Below are steps to find the number of solutions to  $3x + 6 = 6x + 7 - 2x - 4$ . For each solution step, discuss what happened and fill in the missing information.

Write	Describe
<p>1. <math>3x + 6 = 6x + 7 - 2x - 4</math></p> $3x + 6 = 6x + 7 + -2x + -4$ $\begin{array}{r} 3x + 6 = 4x + 3 \\ -3x \quad \quad -3x \end{array}$ $\begin{array}{r} 6 = x + 3 \\ -3 \quad \quad -3 \end{array}$ $3 = x$ <p>One Solution</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px; text-align: center;"> <p>→ can be read as "Became", "Changed To", "To Get"</p> </div> <p><b>Changed to Addition</b> <math>6x + 7 - 2x - 4 \rightarrow \underline{6x} + \underline{7} + \underline{-2x} + \underline{-4}</math> to make it easier to combine like terms.</p> <p><b>Combined Like Terms</b> <math>\underline{6x} + \underline{-2x} \rightarrow 4x</math> and <math>\underline{7} + \underline{-4} \rightarrow 3</math> to simplify the expression.</p> <p><b>Added</b> <math>\underline{3x} + \underline{-3x} \rightarrow 0</math> and <math>\underline{4x} + \underline{-3x} \rightarrow x</math> to get the term with the variable on one side of the equal sign.</p> <p><b>Added</b> <math>\underline{6} + \underline{-3} \rightarrow 3</math> and <math>\underline{3} + \underline{-3} \rightarrow 0</math> to eliminate the term with the variable on one side of the equal sign.</p> <p><b>Decided</b> The number of solutions is <u>one</u>, since the simplified equation is <math>x = \underline{3}</math>.</p>



Name \_\_\_\_\_

Date \_\_\_\_\_

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Readiness** for solving systems of linear equations

## Session 4: Guided Practice (Teacher Notes – Cont.)

Write	Describe
<p>2. <math>-2x + 10 = -2(x - 5)</math></p> <p><math>-2x + 10 = -2(x + -5)</math></p> <p><math>-2x + 10 = -2x + 10</math></p> <p><math>\underline{2x} \quad \quad \quad \underline{2x}</math></p> <p><math>10 = 10</math></p> <p>Infinitely Many Solutions</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <math>\rightarrow</math> can be read as  <i>"Became", "Changed To", "To Get"</i> </div> <p><b>Changed to Addition</b> <math>-2(x - 5) \rightarrow -2(\underline{x} + \underline{-5})</math> to make it easier to combine like terms.</p> <p><b>Multiplied</b> <math>\underline{-2} \cdot \underline{x} \rightarrow -2x</math> and <math>\underline{-2} \cdot \underline{-5} \rightarrow 10</math> to eliminate the parentheses.</p> <p><b>Added and Compared</b> <math>\underline{-2x} + \underline{2x} \rightarrow 0</math> and <math>\underline{-2x} + \underline{2x} \rightarrow 0</math> 10 and 10 are <b>equal</b> to eliminate the term with the variable on one side of the equal sign and check for equality.</p> <p><b>Decided</b> The number of solutions is <b>Infinitely Many</b>, since the simplified equation is <b>true</b>.</p>
<p>3. <math>-2x + 10 = -2(x + 5)</math></p> <p><math>-2x + 10 = -2x + -10</math></p> <p><math>\underline{2x} \quad \quad \quad \underline{2x}</math></p> <p><math>10 \neq -10</math></p> <p>No Solutions</p>	<p><b>Multiplied</b> <math>\underline{-2} \cdot \underline{x} \rightarrow -2x</math> and <math>\underline{-2} \cdot \underline{5} \rightarrow -10</math> to eliminate the parentheses.</p> <p><b>Added and Compared</b> <math>\underline{-2x} + \underline{2x} \rightarrow 0</math> and <math>\underline{-2x} + \underline{2x} \rightarrow 0</math> 10 and -10 are <b>not equal</b> to eliminate the term with the variable on one side of the equal sign and check for equality.</p> <p><b>Decided</b> The number of solutions is <b>Zero</b>, since the simplified equation is <b>false</b>.</p>



## Session 4: Self-Reflection

Algebra 1 – Readiness Standard 2 – 8.EE.7a

**Learning Target:** I will determine the number of solutions to linear equations in one variable

Briefly discuss student responses

- What did I learn today about determining the number of solutions to linear equations in one variable?
  
- How confident do I feel about determining the number of solutions to linear equations in one variable on my own?  
*(Thumbs up, down, or sideways)*



# Algebra 1 Quick Check – Form D

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $2x + 4 = -2x + -4$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $6x + 2 = 3x + 14$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $5x + 6 = 3x + 7 + 2x$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $3x - 4 = 3x - 4$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $4x + 2 = 2(x + 4)$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $8x + 1 = 3(2x + 1) + 2x$ <p>No Solutions   One Solution   Infinitely Many</p>





# Algebra 1 Quick Check – Form E

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $2x + 8 = -2x + 8$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $6x - 2 = 6x + 2$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $5x + 6 = 5x + 6$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $3x + 9 = -2x - 9 - x$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $2x + 6 = 2(x + 3)$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $6x + 3 = 3(2x + 1) + 1$ <p>No Solutions   One Solution   Infinitely Many</p>



# Algebra 1 Quick Check – Form F

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $8x + 2 = 8x - 2$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $3x - 6 = -3x + 6$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $4x - 6 = x - 2 + x - 4$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $3x + 1 = 3x + 1$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $2x + 8 = 2(x + 3) + 1$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $5x + 6 = 2(2x + 4)$ <p>No Solutions   One Solution   Infinitely Many</p>



# Algebra 1 Quick Check – Form G

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $3x + 4 = -3x + 10$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $4x - 1 = 4x - 1$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $5x + 1 = 3x + 1 + 2x$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $2x + 4 = -2x - 4$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $8x + 5 = 4(2x + 1) + 1$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $6x + 4 = 2(3x + 4)$ <p>No Solutions   One Solution   Infinitely Many</p>



# Algebra 1 Quick Check – Form H

Readiness Standard 2 - 8.EE.7a

Name \_\_\_\_\_ Date \_\_\_\_\_

**Learning Target:** I will find the number of solutions to linear equations in one variable.

**Directions:** Circle the number of solutions to each equation. (Work time: 5 minutes)

<p><b>1.</b></p> $2x + 4 = -2x + -4$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>2.</b></p> $6x + 2 = 3x + 14$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>3.</b></p> $5x + 6 = 3x + 7 + 2x$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>4.</b></p> $3x - 4 = 3x - 4$ <p>No Solutions   One Solution   Infinitely Many</p>
<p><b>5.</b></p> $4x + 2 = 2(x + 4)$ <p>No Solutions   One Solution   Infinitely Many</p>	<p><b>6.</b></p> $8x + 1 = 3(2x + 1) + 2x$ <p>No Solutions   One Solution   Infinitely Many</p>