

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	→ can be read as "Became" or "Changed To"
$\begin{array}{c c} +x \\ +x \\ +x \end{array} + \\ +x \\ +x \\ +x \\ - \\ +x \\ - \\ - \end{array}$	2x + 1 = 3x + -4	Changed subtraction to "add the opposite" $3x - 4 \rightarrow ___+___$ to model the equation with algebra tiles.
$\begin{array}{c c} \hline -X & +X \\ \hline -X & +X \\ \hline -X & +X \\ \hline 0 \\ 0 \\ \hline 0 \\ \hline 0 \\ \hline \end{array} + \begin{array}{c c} +X & - \\ \hline +X \\ \hline +X \\ \hline -X \\ \hline 0 \\ \hline \end{array} - \\ \hline 0 \\ \hline \end{array}$	<u>-2x -2x</u>	Added -2x to and to get the terms with the variable on one side of the equal sign.
$\begin{array}{c c} + & \hline & +x & - \\ & - & - \\ & - & - \\ & - & - \end{array}$	1 = x + -4	Removed Zero Pairs $+ -2x \rightarrow 0$ and $+ -2x \rightarrow 0$ to simplify the equation.
$\begin{array}{c c} + + \\ + \\ + \\ + \\ + \\ - + \\ - + \end{array}$	<u>+4 +4</u>	Added 4 to and to get the term with the variable by itself.
+ -+	5 = x	Removed Zero Pairs $+ 4 \rightarrow 5$ and $+ 4 \rightarrow 0$ to simplify the equation.
	One Solution	Decided there is One Solution because <i>x</i> =
	2x + 1 = 3x + -4 2(5) + 1 = 3(5) + -4 10 + 1 = 15 + -4 11 = 11	Verified by substituting for <i>x</i> . The left and right sides of the equal sign are, only when <i>x</i> =
		How many solutions?



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Readiness for solving systems of linear equations

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	→ can be read as "Became" or "Changed To"
$\begin{array}{c c} +x \\ +x \\ +x \end{array} + \\ \hline +x \\ \hline +x \\ \hline +x \\ \hline \end{array}$	2x + 1 = 2x + -1	Changed subtraction to "add the opposite" $2x - 1 \rightarrow ___+___$ to model the equation with algebra tiles.
$\begin{array}{c c} & & & & \\ \hline & & & \\ \hline & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & &$	<u>-2x -2x</u>	Added -2x to and to get the terms with the variable on one side of the equal sign.
+ -	1 ≠ -1	Removed Zero Pairs $+ -2x \rightarrow 0$ and $+ -2x \rightarrow 0$ to simplify the equation.
	No Solutions	Decided there are No Solutions since the simplified equation is Any number chosen will create a false equation!
	2x + 1 = 2x + -1 2(4) + 1 = 2(4) + -1 8 + 1 = 8 + -1 9 \ne 7	Verified by substituting for x. The left and right sides of the equal sign are when x = and any other number you try!
		How many solutions?

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 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.

3. $3x + 10 = -3x + 10$	4. $3x + 10 = 3x - 10$
6x + 10 =	3x + 10 = 3x + -10
6x =	10 ≠
<i>x</i> =	
Number of Solutions =	Number of Solutions =
5. $4x + 1 = 2(2x + 3)$	6. $6x - 4 = 2(2x + 1)$
4x + 1 = 4x +	$6x + ___ = 2(2x + 1)$
1 ≠	$6x + -4 = 4x + _$
	2x =
Number of Solutions =	<i>x</i> =
	Number of Solutions =
7. $3x + 2 = 2x + 1 - 5x + 7$	8. $3x - 5 + x = 5 + 4x - 4$
$3x + 2 = 2x + 1 + ___ + ___$	$3x + -5 + x = 5 + 4x + _$
$3x + 2 = -3x + ___$	4x + -5 = +
6x + 2 =	-5 ≠
6x =	Number of Solutions =
<i>x</i> =	
Number of Solutions =	

Algebra 1 Quick Check – Form A

Readiness Standard 2 - 8.EE.7a

Name_____

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)

1. 2. 2x + 8 = -2x + 86x - 2 = 6x + 2No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 3. 4. 5x + 6 = 5x + 63x + 9 = -2x - 9 - xNo Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 5. 6. 2x + 6 = 2(x + 3)6x + 3 = 3(2x + 1) + 1No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many



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		



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	→ can be read as "Became" or "Changed To"
$\begin{array}{c c} +x \\ +x \\ +x \\ +x \\ +x \end{array} + \\ +x \\ +x \end{array} - \\ +x \\ +x \\ +x \\ +x \end{array}$	3x + 1 = 3x + -2	Changed subtraction to "add the opposite" $3x - 2 \rightarrow ____ + ____$ to model the equation with algebra tiles.
$\begin{array}{c c} \hline x & +x \\ \hline x & +x \\ \hline -x & +x \\ \hline -x & +x \\ \hline & & \\ \hline & & \\ 0 \end{array} + \begin{array}{c c} +x \\ \hline +x \\ \hline +x \\ \hline & -x \\ \hline & & \\ \hline \\ \hline$	<u>-3x -3x</u>	Added -3x to and to get the terms with the variable on one side of the equal sign.
+ -	1 ≠ -2	Removed Zero Pairs + $-3x \rightarrow 0$ and+ $-3x \rightarrow 0$ to simplify the equation.
	No Solutions	Decided there are No Solutions since the simplified equation is Any number chosen will create a false equation!
	3x + 1 = 3x + -2 3(-4) + 1 = 3(-4) + -2 -12 + 1 = -12 + -2 $-11 \neq -14$	Verified by substituting for <i>x</i> . The left and right sides of the equal sign are when <i>x</i> = and any other number you try! How many solutions?



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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	→ can be read as "Became" or "Changed To"
$\begin{array}{c} +x \\ +x \\ +x \end{array} + \left[\begin{array}{c} +x \\ +x \\ +x \end{array} - \begin{array}{c} -x \\ +x \\ +x \\ +x \end{array} + \right]$	2x + 1 = 3x + -3 + -x + 4	Changed subtraction to "add the opposite" $3x-3-x+4 \rightarrow - + - + - + - +$
		to model the equation with algebra tiles.
$\begin{array}{c c} +x \\ +x \\ +x \end{array} + \\ \hline +x \\ +x \\ -x \\ -x \\ -x \\ +x \\ -x \\ -x \\$	2x + 1 = 3x + -x + -3 + 4	Reordered the Terms $3x + -3 + -x + 4 \rightarrow - + + + + + + + + + + + + + + + + + +$
		to get like terms together.
	2x + 1 = 2x + 1	Combined Like Terms + $\rightarrow 2r$ and + $\rightarrow 1$
		to simplify the equation.
	<u>-2x -2x</u>	Added $-2x$ to and
		on one side of the equal sign.
+ +	1 = 1	Removed Zero Pairs + $-2x \rightarrow 0$ and $+ -2x \rightarrow 0$
I		to simplify the equation.
	Infinitely Many Solutions	Decided there are No Solutions since the simplified equation is
		Any number chosen will create a true equation.
	2x + 1 = 3x + -3 + -x + 4 2(7) + 1 = 3(7) + -3 + -(7) + 4	Verified by substituting for <i>x</i> .
	14 + 1 = 21 + -3 + -7 + 4 15 = 15	The left and right sides of the equal sign are when x =
	<u> </u>	and any other number you try.
		How many solutions?

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 and verify your answer on the graph.

3. $4x + 7 = 4x + 9$	4. $-5x + 17 = 5x - 3$
4x + 7 =	-5x + 17 = 5x + -3
7 ≠	17 = 10x +
Number of Solutions =	
	Number of Solutions =
5. $6x - 4 = 2(3x - 2)$	6. $4x - 6 = 2(2x + 1)$
$6x + -4 = 2(3x + \)$	$4x + ___ = 2(2x + 1)$
$6x + -4 = 6x + ___$	$4x + -6 = 4x + _$
-4 =	-6 ≠ 2
Number of Solutions =	Number of Solutions =
7. $3x - 5 + x = 5 + 2x - 4$	8. $3x - 5 + x = 2 + 4x - 7$
3x + -5 + x = 5 + 2x +	$3x + -5 + x = 2 + 4x + _$
4x + -5 = +	4x + -5 = +
2x + -5 =	-5 =
2x =	Number of Solutions -
x =	
Number of Solutions =	

Algebra 1 Quick Check – Form B

Readiness Standard 2 - 8.EE.7a

Name_____

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)

1. 2. 8x + 2 = 8x - 23x - 6 = -3x + 6No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 3. 4. 4x - 6 = x - 2 + x - 43x + 1 = 3x + 1No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 5. 6. 2x + 8 = 2(x + 3) + 15x + 6 = 2(2x + 4)No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many



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
1. $2x + 5 = 6x + 4 - 2x - 5$	→ can be read as "Became" or "Changed To"
2x + 5 = 6x + 4 + -2x + -5	Changed to Addition $6x + 4 - 2x - 5 \rightarrow ___+__+__+__+__+$ to make it easier to combine like terms.
2x + 5 = 4x + -1 $-2x - 2x$	Combined Like Terms $+ - + + + + + + + + + + + + + + + + + $
5 = 2x + -1	Added + $\rightarrow 0$ and + $\rightarrow 2x$ to eliminate the term with the variable on one side of the equal sign.
<u>+1 +1</u>	
6 = 2x	Added $__+__\rightarrow 6$ and $__+__\rightarrow 0$ to get the term with the variable by itself.
2 2	
3 = x	Divided \div \Rightarrow 3 and \div \Rightarrow x to find the value.
One Solution	Decided The number of solutions is, since the simplified equation is $x = \$



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

Readiness for solving systems of linear equations

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

Write	Describe
2. $6x + 15 = 3(2x + 5)$	→ can be read as "Became" or "Changed To"
6x + 12 = 6x + 15	Multiplied • $\rightarrow 6x$ and • $\rightarrow 15$ to eliminate the parentheses.
<u>-6x -6x</u>	
12 ≠ 15	Added and Compared $__+__\rightarrow 0$ and $__+__\rightarrow 0$ 12 and 15 are $___$
	to eliminate the term with the variable on one side of the equal sign and check for equality.
No Solutions	Decided The number of solutions is, since the simplified equation is
3. $5x + 15 = 8x + 7 - 3x + 8$	
5x + 15 = 8x + 7 + -3x + 8	Changed to Addition $8x + 7 - 3x + 8 \rightarrow ___+ __+ __+ __+ __+$ to make it easier to combine like terms.
5x + 15 = 5x + 15	Combined Like Terms $__+_$ \Rightarrow 5x and $__+_$ \Rightarrow 15 to simplify the expression.
<u>-5x -5x</u>	
15 = 15	Added and Compared $__+__\rightarrow 0$ and $__+__\rightarrow 2x$ 15 and 15 are $____$ to eliminate the term with the variable on one side.
Infinitely Many Solutions	Decided The number of solutions is, since the simplified equation is



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.

4.	4x + 3 = -4x + 3	5.	7x + 5 = 7x - 5
	8x + 3 =		7x + 5 = 7x +
	=		5 ≠
	x =		
	Number of Solutions =		Number of Solutions =
6.	5x + 4 = 2(3x + 1)	7.	4x - 12 = 4(x - 3)
	5x + 4 = 6x +		$4x + -12 = 4(___+__)$
	4 = x +		
	$_$ = x		
	Number of Solutions =		Number of Solutions =
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2 2x + 6 = 5x + 20 + +	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2 2x + 6 = 5x + 20 + +	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2 2x + 6 = 5x + 20 + +	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2 2x + 6 = 5x + 20 + +	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2 2x + 6 = 5x + 20 + +	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2 2x + 6 = 5x + 20 + +	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9
8.	Number of Solutions = 2x + 6 = 5x + 20 - 7x - 2 2x + 6 = 5x + 20 + +	9.	Number of Solutions = 2x - 6 + x = 5 - 2x + 9

Algebra 1 Quick Check – Form C

Readiness Standard 2 - 8.EE.7a

Name_____

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)

1. 2. 4x - 1 = 4x - 13x + 4 = -3x + 10No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 3. 4. 5x + 1 = 3x + 1 + 2x2x + 4 = -2x - 4No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 5. 6. 8x + 5 = 4(2x + 1) + 16x + 4 = 2(3x + 4)No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many



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
1.	3x + 6 = 6x + 7 - 2x - 4	→ can be read as "Became" or "Changed To"
	3x + 6 = 6x + 7 + -2x + -4	Changed to Addition $6x + 7 - 2x - 4 \rightarrow \underline{\qquad} + $
	3x + 6 = 4x + 3	Combined Like Terms $+ - + + + + + + + + + + + + + + + + + $
	-3x $-3x$	
	6 = x + 3	Added + $\rightarrow 0$ and + $\rightarrow x$ to eliminate the term with the variable on one side
	<u>-3 -3</u>	or the equal sign.
	3 = x	Added + \rightarrow 3 and + \rightarrow 0 to get the term with the variable by itself.
	One Solution	Decided The number of solutions is, since the simplified equation is $x = \$



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

Readiness for solving systems of linear equations

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

Write	Describe
2. $-2x + 10 = -2(x - 5)$	→ can be read as "Became" or "Changed To"
-2x + 10 = -2(x + -5)	Changed to Addition $-2(x - 5) \rightarrow -2(__+__)$ to make it easier to combine like terms.
-2x + 10 = -2x + 10	Multiplied • \rightarrow -2x and • \rightarrow 10 to eliminate the parentheses.
2x $2x$	
10 = 10	Added and Compared $___+___ \rightarrow 0$ and $___+___ \rightarrow 0$ 10 and 10 are $____$ to eliminate the term with the variable on one side
	of the equal sign and check for equality.
Infinitely Many Solutions	Decided The number of solutions is, since the simplified equation is
3. $-2x + 10 = -2(x + 5)$	
$-2x + 10 = -2x + -10$ $\underline{2x \qquad 2x}$	Multiplied • $\rightarrow -2x$ and • $\rightarrow -10$ to eliminate the parentheses.
10 ≠ -10	Added and Compared $__+__\rightarrow 0$ and $_\+_\rightarrow 0$ 10 and -10 are $____$ to eliminate the term with the variable on one side.
No Solutions	Decided The number of solutions is, since the simplified equation is



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.	6x + 4 = 2(3x + 4)	7.	2x - 6 = 2(x - 3)
8. 4	x + 2 = x + 2 + x + 6	9. 5 <i>x</i>	+2 = -2x + 6 + 7x - 4

Algebra 1 Quick Check – Form D

Readiness Standard 2 - 8.EE.7a

Name_____

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)

1. 2. 2x + 4 = -2x + -46x + 2 = 3x + 14No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 3. 4. 5x + 6 = 3x + 7 + 2x3x - 4 = 3x - 4No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 5. 6. 8x + 1 = 3(2x + 1) + 2x4x + 2 = 2(x + 4)No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many



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)

1. 2. 6x - 2 = 6x + 22x + 8 = -2x + 8No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 3. 4. 3x + 9 = -2x - 9 - x5x + 6 = 5x + 6No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many 5. 6. 2x + 6 = 2(x + 3)6x + 3 = 3(2x + 1) + 1No Solutions One Solution Infinitely Many No Solutions One Solution Infinitely Many



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)

1.		2.	
	8x + 2 = 8x - 2		3x - 6 = -3x + 6
	No Solutions One Solution Infinitely Many	No	Solutions One Solution Infinitely Many
3.		4.	
	4x - 6 = x - 2 + x - 4		3x + 1 = 3x + 1
	No Solutions One Solution Infinitely Many	No	Solutions One Solution Infinitely Many
5.		6.	
	2x + 8 = 2(x + 3) + 1		5x + 6 = 2(2x + 4)
	No Solutions One Solution Infinitely Many	No	Solutions One Solution Infinitely Many



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)

1.		2.
	3x + 4 = -3x + 10	4x - 1 = 4x - 1
	No Solutions One Solution Infinitely Many	No Solutions One Solution Infinitely Many
3.		4.
	5x + 1 = 3x + 1 + 2x	2x + 4 = -2x - 4
	No Solutions One Solution Infinitely Many	No Solutions One Solution Infinitely Many
5.		6.
	8x + 5 = 4(2x + 1) + 1	6x + 4 = 2(3x + 4)
	No Solutions One Solution Infinitely Many	No Solutions One Solution Infinitely Many



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)

1.	2.
2x + 4 = -2x + -4	6x + 2 = 3x + 14
No Solutions One Solution Infinitely Many	No Solutions One Solution Infinitely Many
3.	4.
5x + 6 = 3x + 7 + 2x	3x - 4 = 3x - 4
No Solutions One Solution Infinitely Many	No Solutions One Solution Infinitely Many
5.	6.
4x + 2 = 2(x + 4)	8x + 1 = 3(2x + 1) + 2x
No Solutions One Solution Infinitely Many	No Solutions One Solution Infinitely Many
No Solutions One Solution Infinitely Many	No Solutions One Solution Infinitely Many