Name _____ Date _____

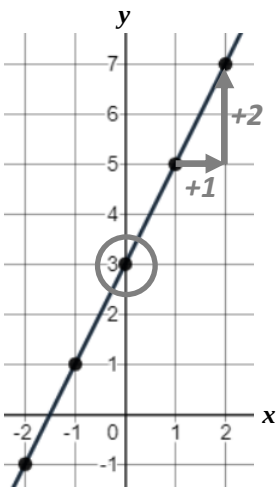
Learning Target: I will find the equation of a line
Readiness for graphing functions expressed symbolically

Algebra 1 – Readiness Standard 3 – 8.F.4

Session 1: Guided Practice (Whole Group)

x	y
-2	-1
-1	1
0	3
1	5
2	7

+1 +2 +1 +2 +1 +2 +1 +2



Slope = $\frac{2}{1}$ = **2**

y-intercept = 3

Equation of Line:
$y = 2x + 3$

Directions: A line is represented above in a table, graph and equation. Complete the statements below.

1. The **slope** represents the *steepness* of a line and is $\frac{the\ change\ in\ y\ values}{the\ change\ in\ x\ values}$ between two points on the line.

a. In the table, each x-value increases by _____ and each y-value increases by _____.

b. In the graph, the arrows show the x-values increasing by _____ and the y-values increasing by _____.

c. The **slope** of the line is ___ = _____.

2. The **y-intercept** of a line is the y-value of the point where the line crosses the y-axis and the x-value is 0.

a. In the graph, (_____, _____) is the coordinate of the point where the line crosses the y-axis.

b. In the table, the point where the line crosses the y-axis is when the x-value is _____.

c. The **y-intercept** of the line is _____.

3. The equation of a line relates **slope**, **y-intercept** and the coordinates of each point on the line **(x, y)**. And is written as: y = slope • x + **y-intercept**. Therefore, the equation of the line above is

y = _____ x + _____

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 1: Number of Solutions (Pairs)

Directions: Match the description, table and graph representing the same linear equation.

Example:

Described as words

$y = 3x + 2$

When $x = 0$, $y = 2$
(y-intercept)

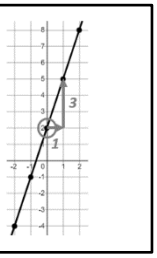
When an x-value **increases by 1**, the y-value **increases by 3**
(Slope)

Table

x	y
-2	-4
-1	-1
0	2
1	5
2	8

+1 +3 +1 +3 +1 +3 +1 +3

Graph



Name _____ Date _____

Learning Target: I will find the equation of a line

Algebra 1 – Readiness Standard 3 – 8.F.4

Readiness for graphing functions expressed symbolically

Session 2: Guided Practice (Whole Group)

1. Below are the algebraic steps to find the equation of the line through the points (-1, 2) and (2, 11). For each solution step, discuss what happened and fill in the missing information.

Calculate the slope of the line given two points

Slope $= \frac{y_2 - y_1}{x_2 - x_1} = \frac{11 - 2}{2 - -1} = \frac{9}{3} = 3$

Slope Formula

Substituted coordinates

$(x_1, y_1) =$ (_____, _____)

$(x_2, y_2) =$ (_____, _____)

Added to Subtract

2 + _____ = 3

Simplified

_____ ÷ _____ = 3

Find the value of the y-intercept

$y = m \bullet x + b$ **Slope-Intercept Equation**

slope = ____, y-intercept = ____

$11 = 3 \bullet 2 + b$ **Substituted Known Values**

x_2 = _____, y_2 = _____,

and m = _____

$11 = 6 + b$ **Multiplied to Simplify**

_____ • _____ = 6

-6 -6

$5 = b$ **Added to find b**

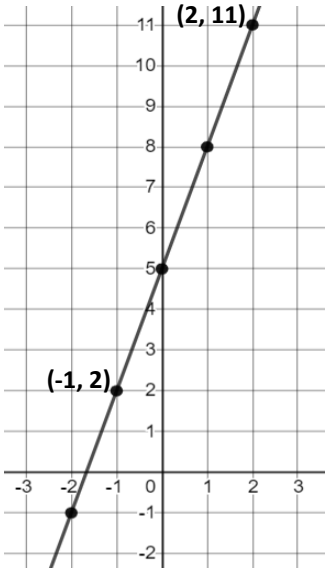
_____ + _____ = 5

_____ + _____ = 0

Conclusion: The slope of the line is _____ and the y-intercept is _____. Therefore, the equation of the line extending through points the (-1, 2) and (2, 11) is $y =$ ___x + ___.

2. Verify the algebraic solution above by finding the value of the slope and y-intercept in the table and graph.

x	y
-2	-1
-1	**2**
0	5
1	8
2	**11**



Name _____ Date _____

Learning Target: I will find the equation of a line

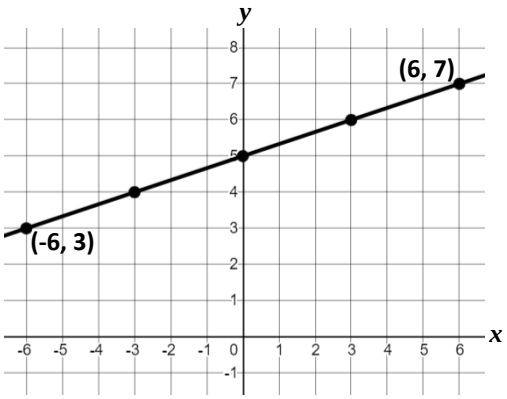
Algebra 1 – Readiness Standard 3 – 8.F.4

Readiness for graphing functions expressed symbolically

Session 2: Guided Practice (Pairs)

3. Complete the algebraic steps to find the equation of the line through the points (-6, 3) and (6, 7). Then check your work by finding the slope and y-intercept in the graph.

Slope = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 3}{6 - -6} = \frac{\quad}{\quad} = \frac{\quad}{\quad}$



$y = mx + b$

$7 = \frac{1}{3} \bullet 6 + b$

___ = ___ + **b**

-2 -2

___ = **b**

$y = \square x + \square$

4. Complete the algebraic steps to find the equation of the line through the points (-1, -8) and (2, 7). Then check your work by finding the slope and y-intercept in the table.

Slope = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - }{2 - } = \frac{\quad}{3} = \frac{5}{\quad}$

x	y
-2	-13
-1	-8
0	-3
1	2
2	7

$y = mx + b$

___ = ___ • 2 + **b**

___ = ___ + **b**

-10 -10

___ = b

$y = \square x + \square$

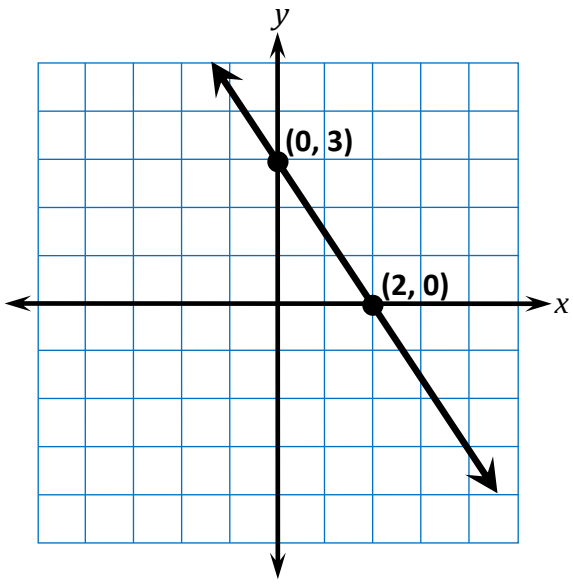
Algebra 1 Quick Check – Form A

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	y
-1	6
0	4
1	2
2	0
3	-2

$y = \square x + \square$

Algebra 1 Quick Check – Form A

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-2	-1
0	5
2	11
4	17
6	23

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

$(-3, -2)$ and $(4, 12)$

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

$(3, 9)$ and $(15, 17)$

$y = \square x + \square$

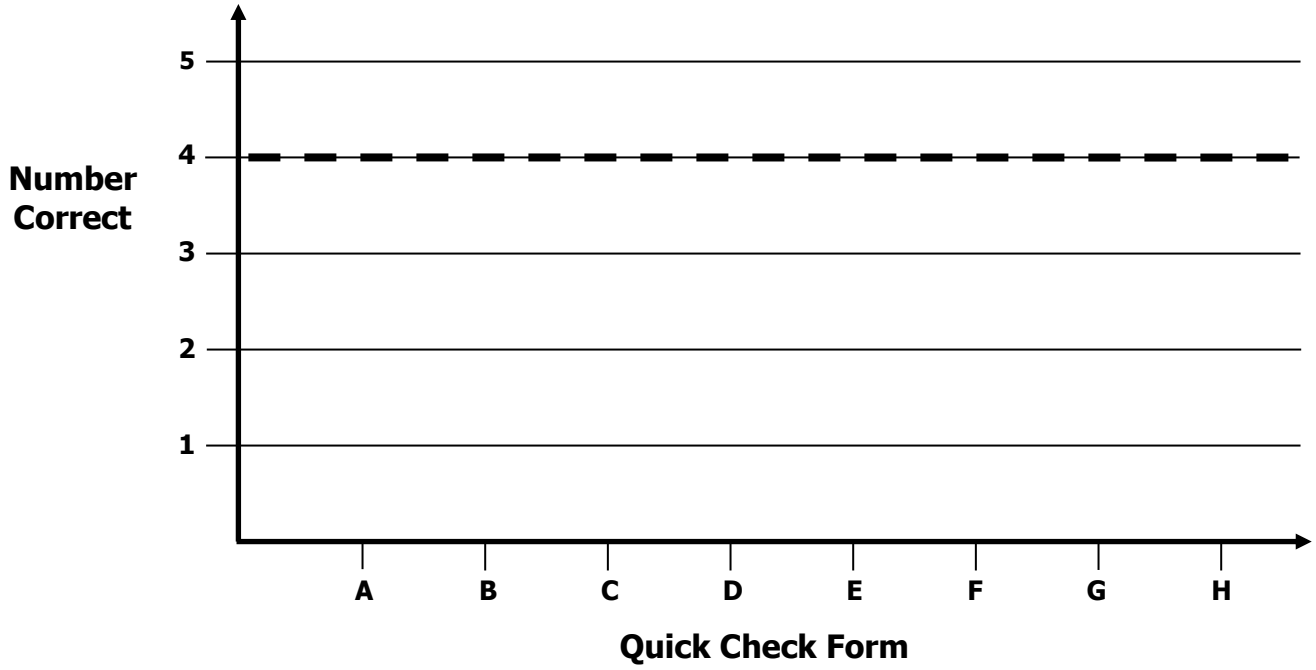
Algebra 1 Growth Chart

Readiness Standard 2 - 8.EE.7a

Name_____

Learning Target: I will find the equation of a line.

Goal: 4 out of 5 correct



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

Name _____ Date _____

Learning Target: I will find the equation of a line
Readiness for graphing functions expressed symbolically

Algebra 1 – Readiness Standard 3 – 8.F.4

Session 3: Guided Practice (Whole Group)

1. Below are the algebraic steps to find the equation of the line through the points (-6, 3) and (6, 11). For each solution step, discuss what happened and fill in the missing information.

Calculate the slope of the line given two points

Slope $= \frac{y_2 - y_1}{x_2 - x_1} = \frac{11 - 3}{6 - -6} = \frac{8}{12} = \frac{2}{3}$

Slope Formula

Substituted coordinates
$(x_1, y_1) =$ (_____, _____)
$(x_2, y_2) =$ (_____, _____)

Added to Subtract
6 + _____ = 12

Simplified
_____ ÷ _____ = 2
_____ ÷ _____ = 3

Find the value of the y-intercept

$y = mx + \mathbf{b}$ **Slope-Intercept Equation**
slope = ____, y-intercept = ____

$11 = \frac{2}{3} \bullet 6 + \mathbf{b}$ **Substituted Known Values**
x_2 = _____, y_2 = _____,
and m = _____

$11 = 4 + \mathbf{b}$ **Multiplied to Simplify**
_____ • _____ = 4

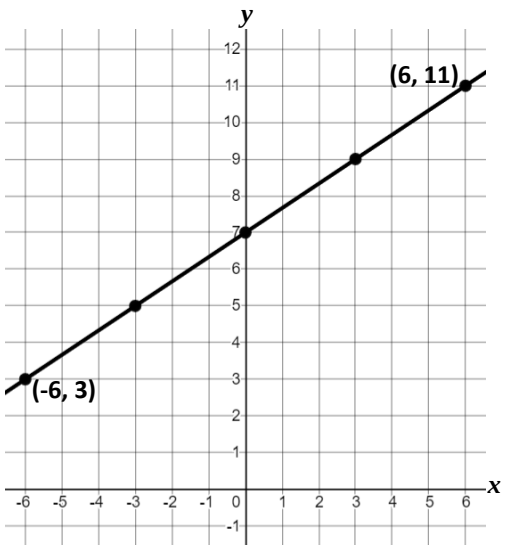
-4 -4

$7 = \mathbf{b}$ **Added to find "b"**
_____ + _____ = 7
and
_____ + _____ = 0

Conclusion: The slope of the line is _____ and the y-intercept is _____. Therefore, the equation of the line extending through points the (-6, 3) and (6, 11) is $y = \_\_\_x + \_\_\_$.

2. Verify the algebraic solution above by finding the value of the slope and y-intercept in the table and graph.

x	y
-6	**3**
-3	5
0	7
3	9
6	**11**



Name _____ Date _____

Learning Target: I will find the equation of a line

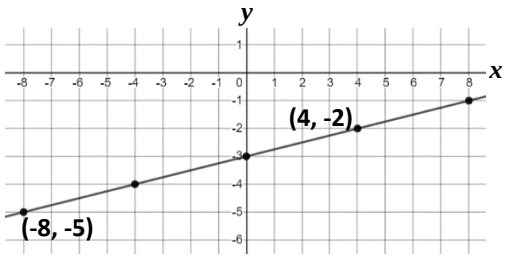
Algebra 1 – Readiness Standard 3 – 8.F.4

Readiness for graphing functions expressed symbolically

Session 3: Guided Practice (Pairs)

3. Complete the algebraic steps to find the equation of the line through the points (-8, -5) and (4, -2). Then check your work by finding the slope and y-intercept in the graph.

Slope = $\frac{y_2 - y_1}{x_2 - x_1}$ = $\frac{-2 -}{4 -}$ = ____ = ____



$y = mx + b$

$-2 = \frac{1}{4} \bullet$ ___ $+ b$

$-2 =$ ___ $+ b$

-1 -1

___ $= b$

$y = \square x + \square$

4. Complete the algebraic steps to find the equation of the line through the points (-2, 8) and (2, -4). Then check your work by finding the slope and y-intercept in the table.

Slope = $\frac{y_2 - y_1}{x_2 - x_1}$

$y = mx + b$

x	y
-2	8
-1	5
0	2
1	-1
2	-4

$y = \square x + \square$

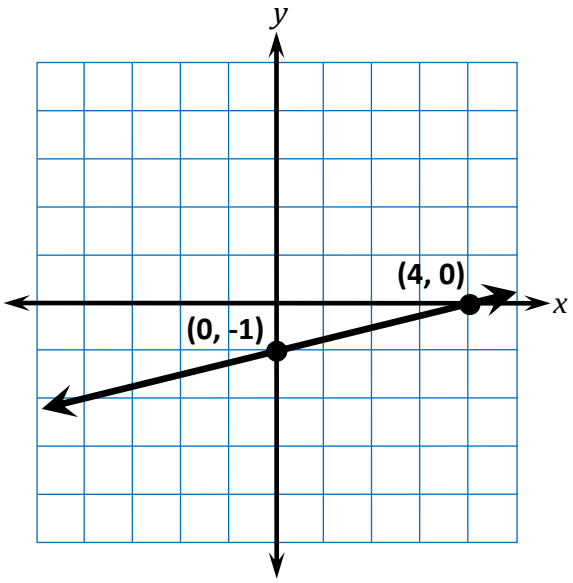
Algebra 1 Quick Check – Form B

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	*y*
-3	0
-2	-3
-1	-6
0	-9
1	-12

$y = \square x + \square$

Algebra 1 Quick Check – Form B

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-6	-28
-3	-13
0	2
3	17
6	32

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

$(-3, -4)$ and $(3, 14)$

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

$(5, 7)$ and $(15, 13)$

$y = \square x + \square$

Name _____ Date _____

Learning Target: I will find the equation of a line

Algebra 1 – Readiness Standard 3 – 8.F.4

Readiness for graphing functions expressed symbolically

Session 4: Guided Practice (Whole Group)

1. Below are the algebraic steps to find the equation of the line through the points (-3, -5) and (6, -2). For each solution step, discuss what happened and fill in the missing information.

Calculate the slope of the line given two points

$$\text{Slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - -5}{6 - -3} = \frac{3}{9} = \frac{1}{3}$$

Slope Formula

Substituted coordinates

$(x_1, y_1) = (\_\_\_\_\_, \_\_\_\_\_)$

$(x_2, y_2) = (\_\_\_\_\_, \_\_\_\_\_)$

Added to Subtract

-2 + _____ = 3

6 + _____ = 9

Simplified

_____ ÷ _____ = 1

_____ ÷ _____ = 3

Find the value of the y-intercept

$y = mx + b$ **Slope-Intercept Equation**

slope = ____, y-intercept = ____

$-2 = \frac{1}{3} \bullet 6 + b$ **Substituted Known Values**

x_2 = _____, y_2 = _____,

and m = _____

$-2 = 2 + b$ **Multiplied to Simplify**

-2 -2 _____ • _____ = 2

$-4 = b$ **Added to find b**

_____ + _____ = -4

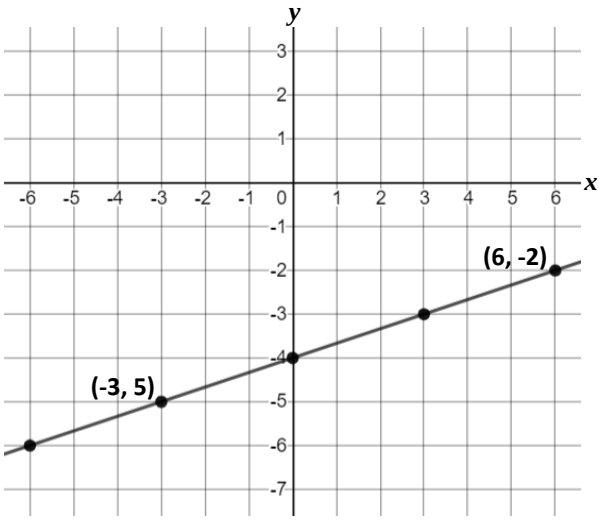
and

_____ + _____ = 0

Conclusion: The slope of the line is _____ and the y-intercept is _____. Therefore, the equation of the line extending through points the (-3, -5) and (6, -2) is $y =$ ___$x +$ ___.

2. Verify the algebraic solution above by finding the value of the slope and y-intercept in the table and graph.

x	y
-6	-6
-3	**-5**
0	-4
3	-3
6	**-2**



Name _____ Date _____

Learning Target: I will find the equation of a line

Algebra 1 – Readiness Standard 3 – 8.F.4

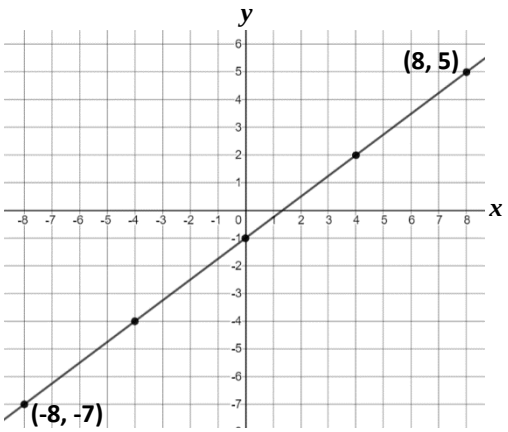
Readiness for graphing functions expressed symbolically

Session 4: Guided Practice (Pairs)

3. Complete the algebraic steps to find the equation of the line through the points (-8, -7) and (8, 5). Then check your work by finding the slope and y-intercept in the graph.

Slope $= \dfrac{y_2 - y_1}{x_2 - x_1}$

$y = mx + \mathbf{b}$



$y = \square\, x + \square$

4. Complete the algebraic steps to find the equation of the line through the points (-2, 8) and (1, 2). Then check your work by finding the slope and y-intercept in the table.

Slope =

$y =$

x	y
-2	8
-1	6
0	4
1	2
2	0

$y = \square\, x + \square$

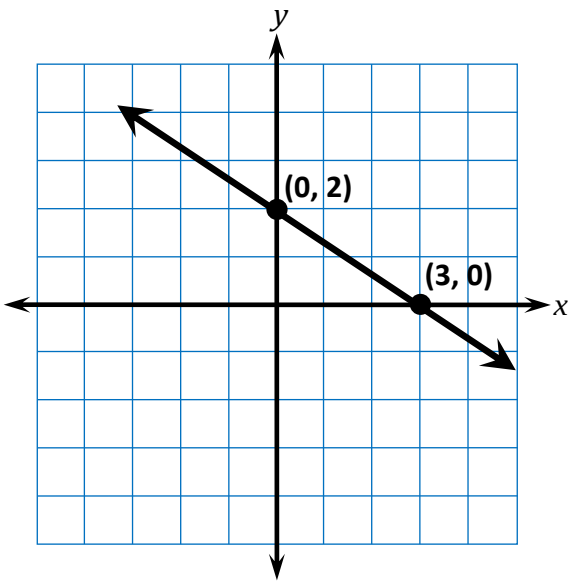
Algebra 1 Quick Check – Form C

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	*y*
-2	0
-1	3
0	6
1	9
2	12

$y = \square x + \square$

Algebra 1 Quick Check – Form C

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-4	-13
-2	-5
0	3
2	11
4	19

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

$(-4, -5)$ and $(2, 7)$

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

$(4, 5)$ and $(12, 11)$

$y = \square x + \square$

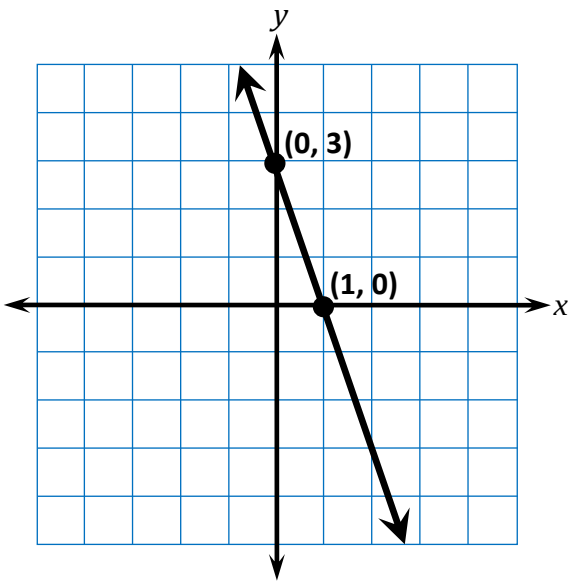
Algebra 1 Quick Check – Form D

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	y
0	6
1	4
2	2
3	0
4	-2

$y = \square x + \square$

Algebra 1 Quick Check – Form D

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-6	-7
-3	-1
0	5
3	11
6	17

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

(-2, -5) and (2, 11)

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

(5, 8) and (20, 14)

$y = \square x + \square$

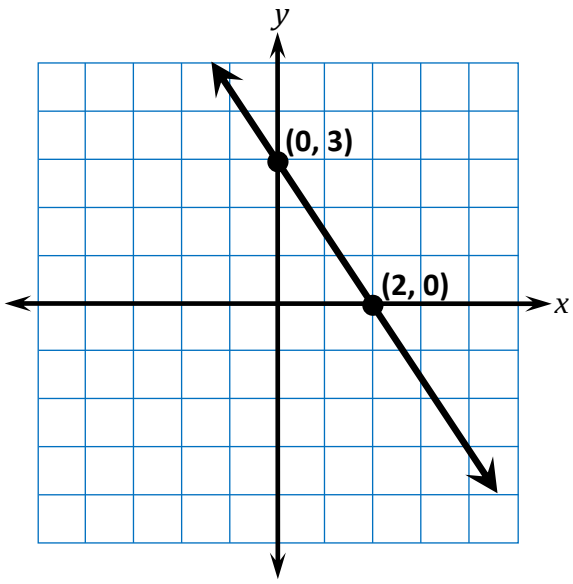
Algebra 1 Quick Check – Form E

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	y
-1	6
0	4
1	2
2	0
3	-2

$y = \square x + \square$

Algebra 1 Quick Check – Form E

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-2	-1
0	5
2	11
4	17
6	23

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

$(-3, -2)$ and $(4, 12)$

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

$(3, 9)$ and $(15, 17)$

$y = \square x + \square$

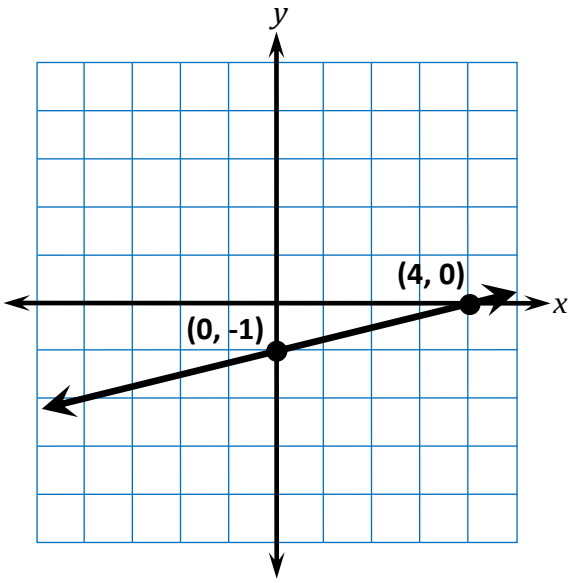
Algebra 1 Quick Check – Form F

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	*y*
-3	0
-2	-3
-1	-6
0	-9
1	-12

$y = \square x + \square$

Algebra 1 Quick Check – Form F

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-6	-28
-3	-13
0	2
3	17
6	32

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

(-3, -4) and (3, 14)

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

(5, 7) and (15, 13)

$y = \square x + \square$

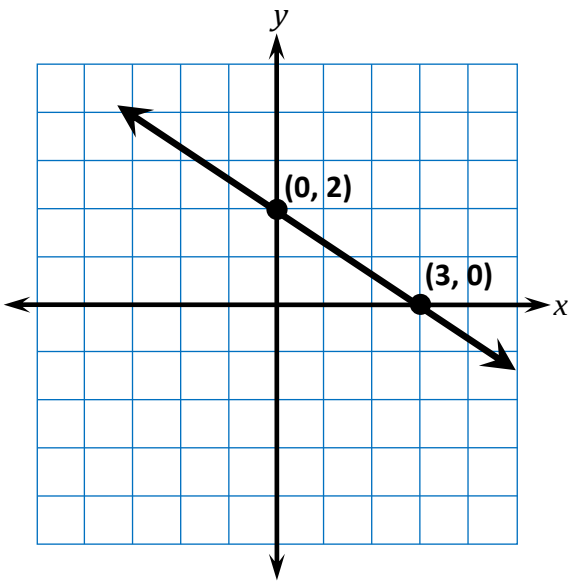
Algebra 1 Quick Check – Form G

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	*y*
-2	0
-1	3
0	6
1	9
2	12

$y = \square x + \square$

Algebra 1 Quick Check – Form G

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-4	-13
-2	-5
0	3
2	11
4	19

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

$(-4, -5)$ and $(2, 7)$

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

$(4, 5)$ and $(12, 11)$

$y = \square x + \square$

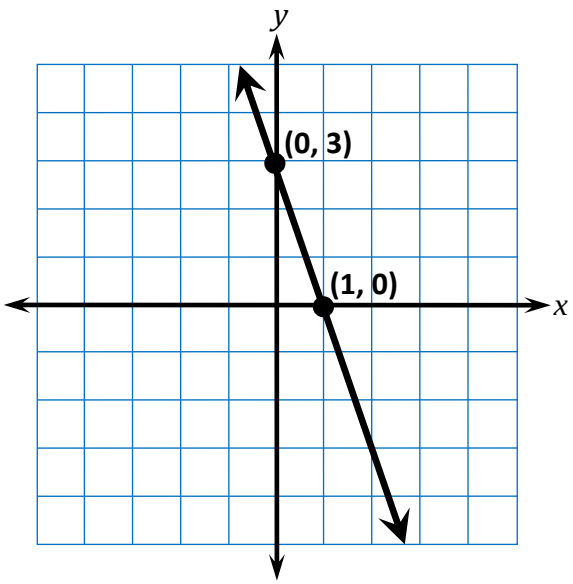
Algebra 1 Quick Check – Form H

Readiness Standard 3 - 8.F.4

Name_____ Date_____

Learning Target: I will find the equation of a line. (Work time: 5 minutes)

1. Complete the equation of the line represented in the graph.



$y = \square x + \square$

2. Complete the equation of the line represented in the table.

x	y
0	6
1	4
2	2
3	0
4	-2

$y = \square x + \square$

Algebra 1 Quick Check – Form H

Readiness Standard 3 - 8.F.4 (continued)

3. Complete the equation of the line represented in the table.

x	y
-6	-7
-3	-1
0	5
3	11
6	17

$y = \square x + \square$

4. Complete the equation of the line that contains the two points.

$(-2, -5)$ and $(2, 11)$

$y = \square x + \square$

5. Complete the equation of the line that contains the two points.

$(5, 8)$ and $(20, 14)$

$y = \square x + \square$