Lesson 5.4 Graphing Linear Equations Day 2
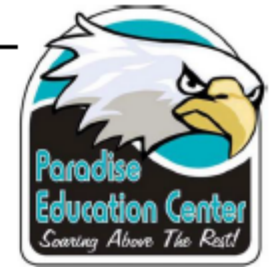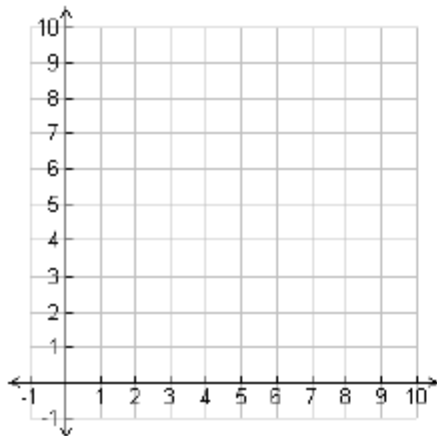
Sasha has a riddle: There are two numbers. The sum of the first number and twice the second number is 14. When the second number is subtracted from the first number, the result is 2. What are the two numbers?

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Finding Distance
Find the distance between the two points A(2,1) and B(10,5).

Find each missing length to the nearest tenth.

6

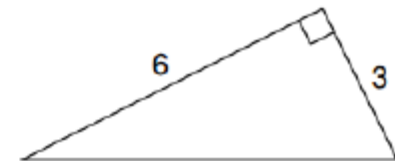3

Lesson 5.4 Graphing Linear Equations Day 2

Sasha has a riddle: There are two numbers. The sum of the first number and twice the second number is 14. When the second number is subtracted from the first number, the result is 2. What are the two numbers?

$x + 2y = 14$ — Equation 1

$x - y = 2$ — Equation 2

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The two numbers are 6 and 4.

Finding Distance
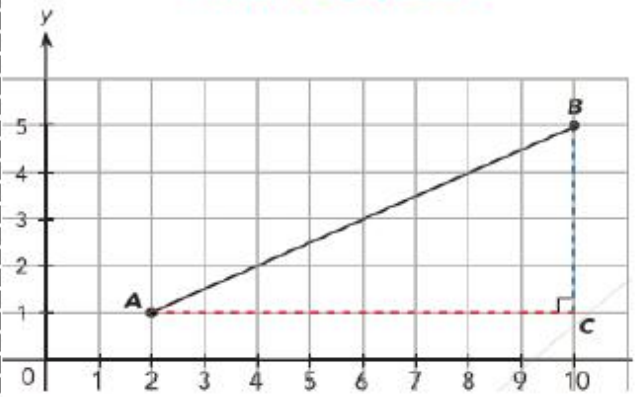
$AC^2 + BC^2 = AB^2$
$8^2 + 4^2 = AB^2$
$64 + 16 = AB^2$
$80 = AB^2$
$\sqrt{80} = AB$
$AB \approx 8.9$ units

Caution
The length of a segment is always positive. So, $AB = \sqrt{80}$ but not $-\sqrt{80}$.

Find each missing length to the nearest tenth.

6

3

6.7
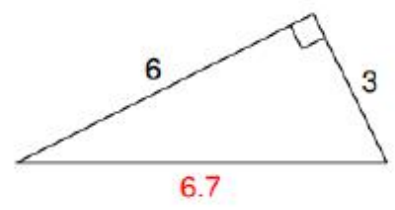
Lesson 5.4 Graphing Linear Equations Day 2

Objective

TSW solve systems of linear equations by finding the unique solution using the following strategy…

*Elimination Method

*Substitution Method

*Graphical Method

A system of linear equations may have a unique solution. It can be solved using the elimination, substitution, or graphical methods.

Common Core State Standards

8EE 8a Understand that solutions to a system…satisfy both equations simultaneously. 8EE 8 b Solve Systems of two linear equations in two variables algebraically

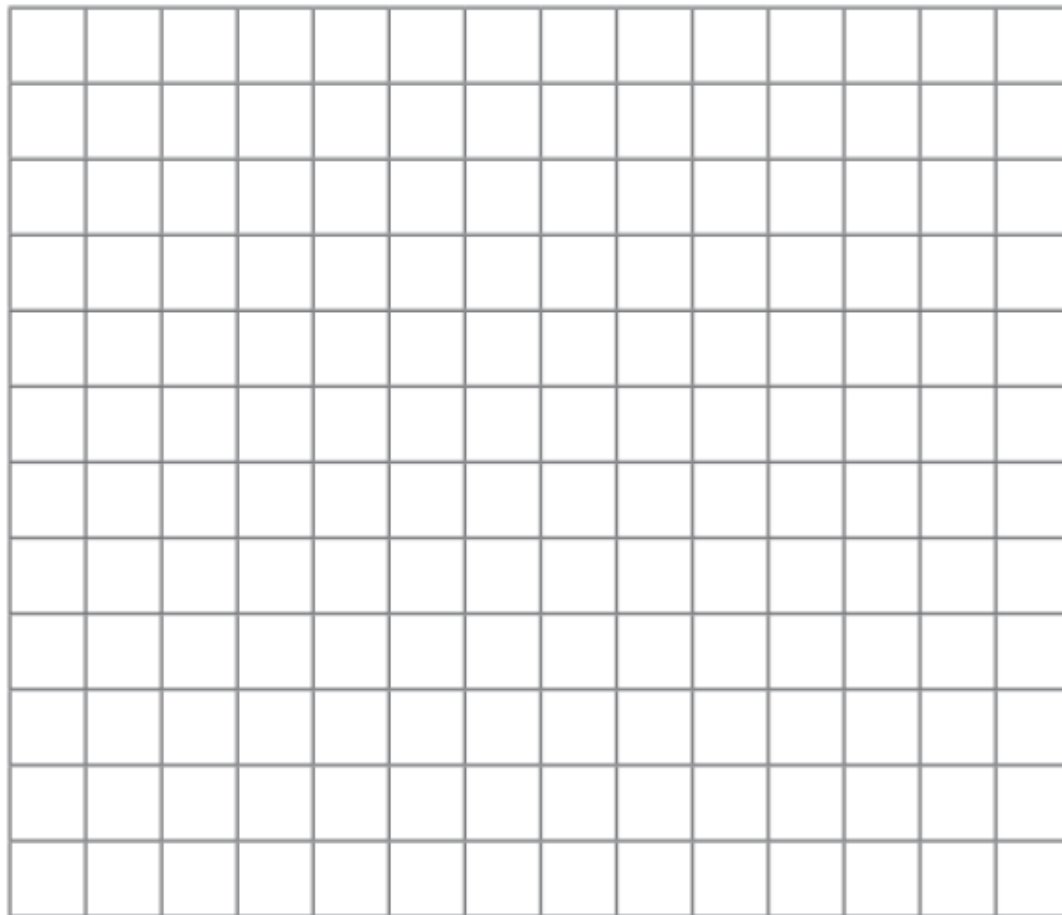**Mathematical Practices** *2 Reason 3 Construct arguments 4 Model Mathematics*

Quick Write-

What are two methods used to graph

linear equations?

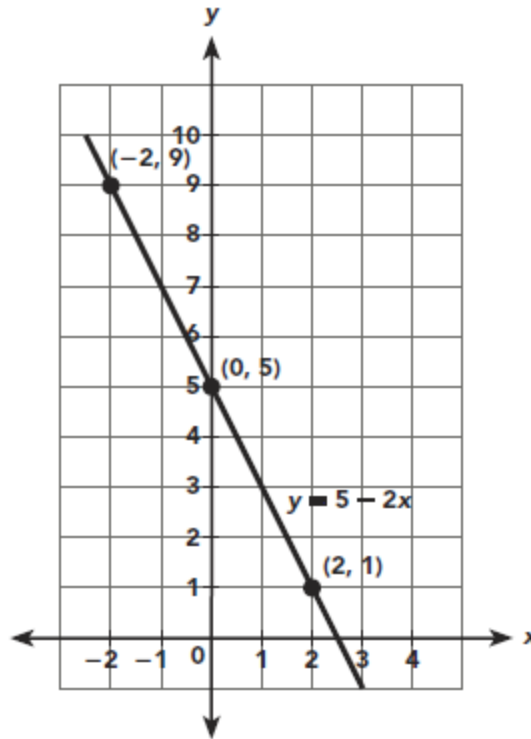**Lesson 5.4 Graphing Linear Equations Day 2**

Guided Practice

4. $y = 5 - 2x$

Lesson 5.4 Graphing Linear Equations Day 2
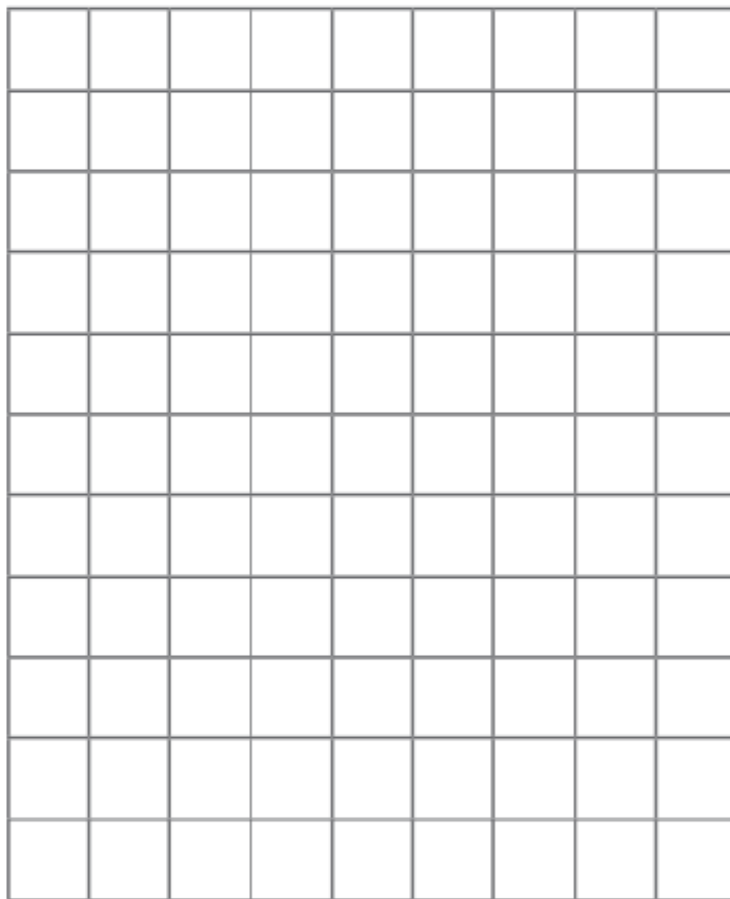
x	−2	0	2
y	9	5	1

Lesson 5.4 Graphing Linear Equations Day 2

Guided Practice

6. $y = \dfrac{4}{3}x - 4$

Lesson 5.4 Graphing Linear Equations Day 2

Guided Practice

6.

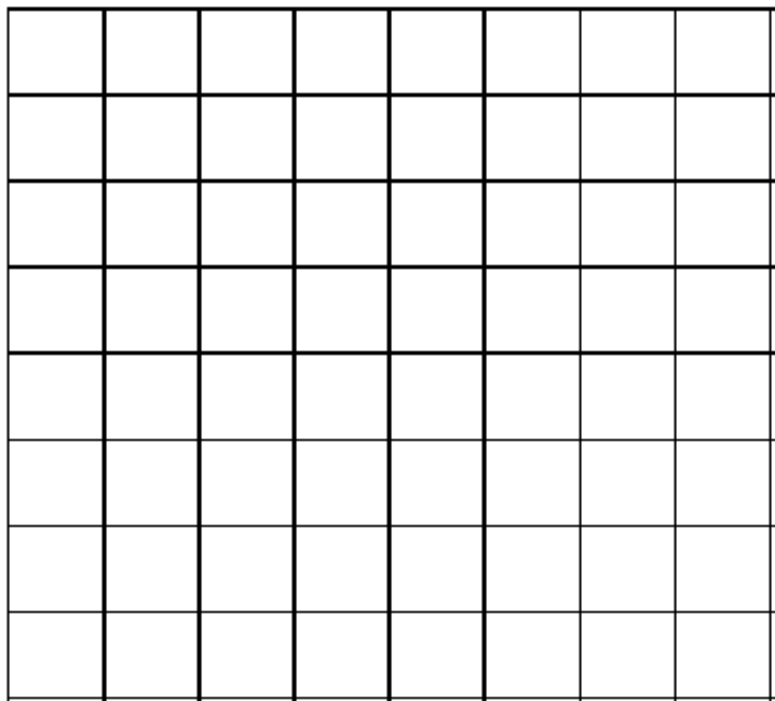| x	−3	0	3
y	−8	−4	0

$(3, 0)$

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

$(0, -4)$

$(-3, 8)$

You can solve systems of linear equations using the graphical method.

Consider this system of linear equations.

$y - x = 3$ — Equation 1

$x + y = -1$ — Equation 2

First rewrite the Equation 1 in slope-intercept form as $y = x + 3$. Then graph of the linear equation $y - x = 3$ on a coordinate plane.

> The graph has slope 1, and intersects the y-axis at (0, 3).

Next rewrite Equation 2 in slope-intercept form as $y = -x - 1$ and graph the linear equation $x + y = -1$ on the same coordinate plane.

Lesson 5.4 Graphing Linear Equations Day 2

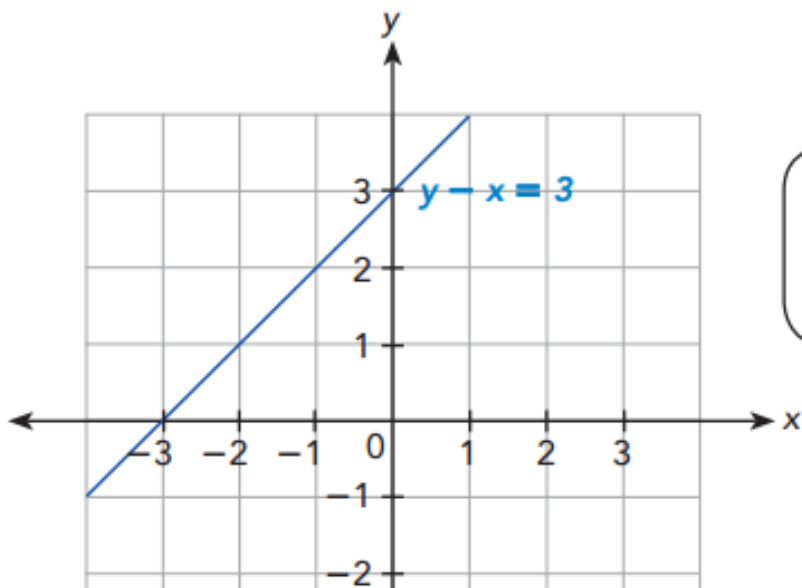## Solve Systems of Linear Equations Using the Graphical Method.

You can solve systems of linear equations using the graphical method.
Consider this system of linear equations.

$y - x = 3$ — Equation 1
$x + y = -1$ — Equation 2

First rewrite the Equation 1 in slope-intercept form as $y = x + 3$. Then graph of the linear equation $y - x = 3$ on a coordinate plane.

The graph has slope 1, and intersects the y-axis at (0, 3).

Ticket Out the Door-

How do you determine the solution to a system of linear equations graphically?