

Lesson 5.4 Graphing Linear Equations Day 3

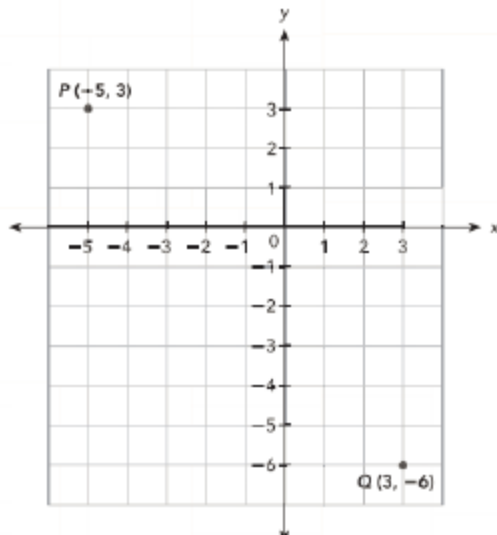
Week 1 Thursday Course 3 Warm-up



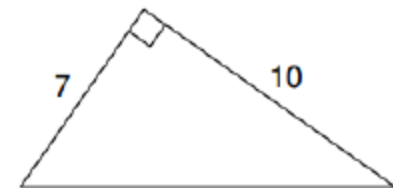
Jean stocked her aquarium with 36 fresh-water fish, which cost \$212. The male fish cost \$5 each, while the female fish cost \$7 each. Find the number of male fish and the number of female fish

Finding Distance

Find the distance between the two points $P(-5, 3)$ and $Q(3, -6)$.



Find each missing length to the nearest tenth.



Week 1 Thursday Course 3 Warm-up



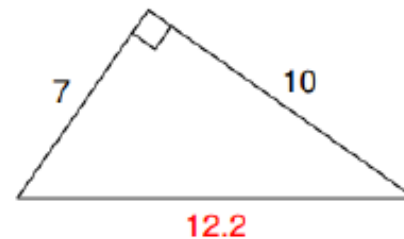
Jean stocked her aquarium with 36 fresh-water fish, which cost \$212. The male fish cost \$5 each, while the female fish cost \$7 each. Find the number of male fish and the number of female fish. **Male: 20; Female: 16**

Finding Distance

Find the distance between the two points $P(-5,3)$ and $Q(3,-6)$.

$PR^2; QR^2$	Use the Pythagorean Theorem.
$9^2; 8^2$	Substitute values for PR and QR .
$81; 64$	Multiply.
145	Add.
$\sqrt{145}$	Find the positive square root.
units 12.0	Round to the nearest tenth.

Find each missing length to the nearest tenth.



Lesson 5.4 Graphing Linear Equations Day 3

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

Solve Systems of Linear Equations Using the Graphical Method.

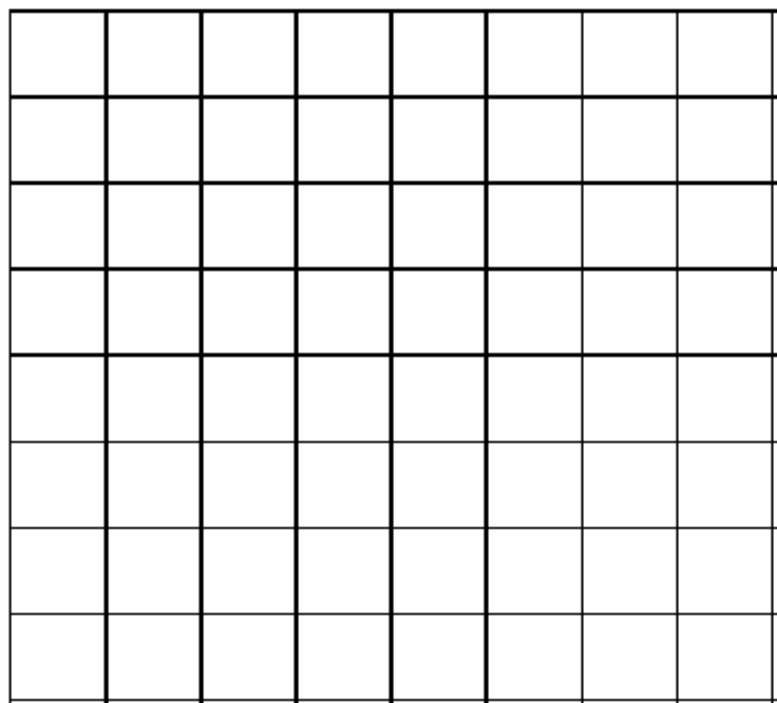
You can solve systems of linear equations using the graphical method.

Consider this system of linear equations.

$$y - x = 3 \quad \text{— Equation 1}$$

$$x + y = -1 \quad \text{— Equation 2}$$

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.

Solve Systems of Linear Equations Using the Graphical Method.

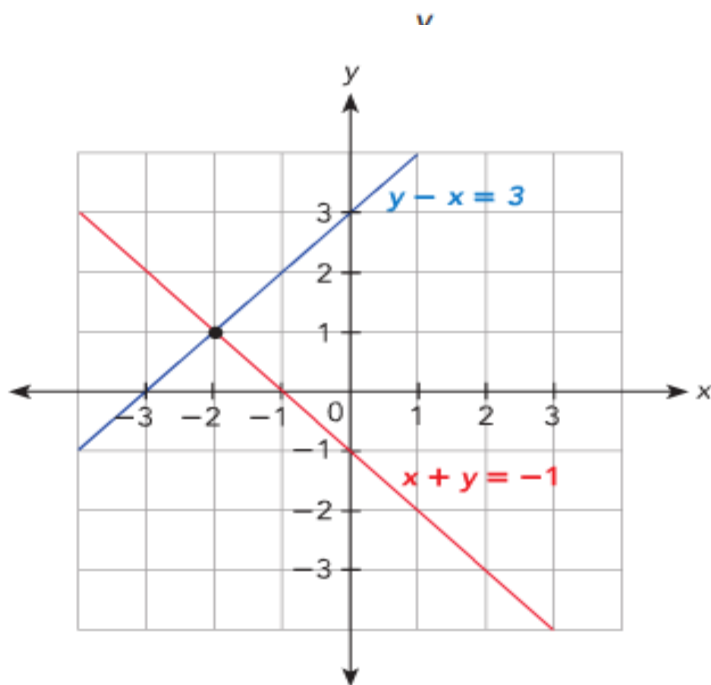
You can solve systems of linear equations using the graphical method.

Consider this system of linear equations.

$$y - x = 3 \quad \text{— Equation 1}$$

$$x + y = -1 \quad \text{— Equation 2}$$

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 3

Guided Practice

Solve using the graphical method. Copy and complete the tables of values. Graph the system of linear equations on the same coordinate plane. Use 1 grid square on both axes to represent 1 unit for the x interval from -1 to 3 and the y interval from -1 to 5 .

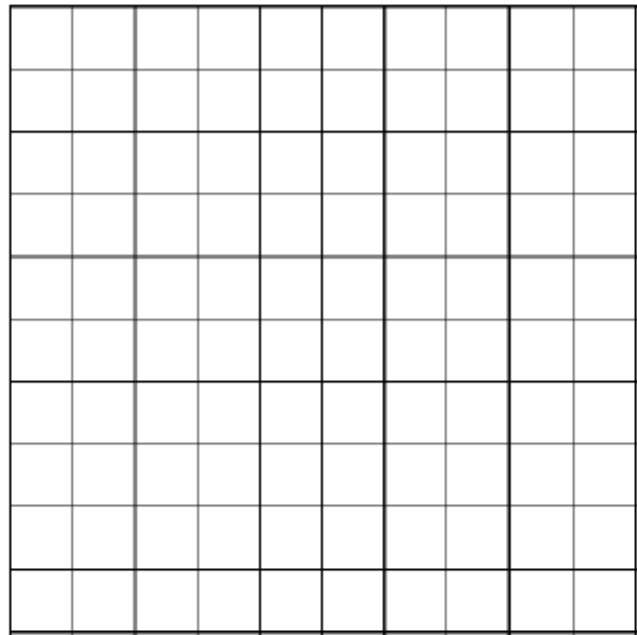
1 $2x + y = 5$
 $x - y = -2$

$2x + y = 5$

x	0	1	2
y	-	-	-

$x - y = -2$

x	0	1	2
y	-	-	-



Lesson 5.4 Graphing Linear Equations Day 3

Guided Practice

Solve using the graphical method. Copy and complete the tables of values. Graph the system of linear equations on the same coordinate plane. Use 1 grid square on both axes to represent 1 unit for the x interval from -1 to 3 and the y interval from -1 to 5 .

1 $2x + y = 5$ 1 See margin for graph.

$$x - y = -2$$

$$2x + y = 5$$

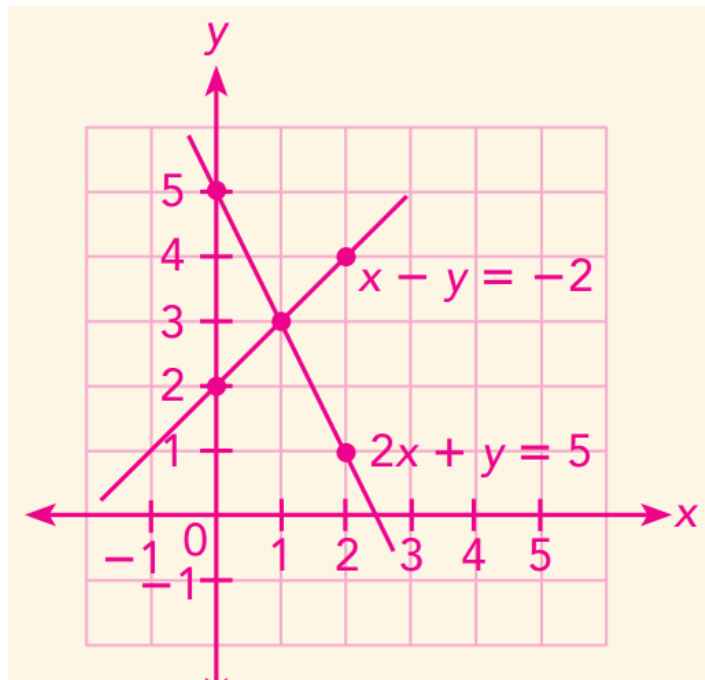
x	0	1	2
y	?	?	?

5; 3; 1

$$x - y = -2$$

x	0	1	2
y	?	?	?

2; 3; 4



Lesson 5.4 Graphing Linear Equations Day 3

Practice 5.4 #1-10

Name: _____ Date: _____

Practice 5.4

For this practice, unless otherwise stated, use 1 grid square to represent 1 unit on both axes for the interval from -8 to 8 . Solve each system of linear equations using the graphical method.

1 $x + y = 6$
 $2x + y = 8$

a) Copy and complete the tables of values for the system of linear equations.

x	0	1	2
y	6	?	?

x	0	1	2
y	?	6	?

b) Graph $x + y = 6$ and $2x + y = 8$ on the same coordinate plane. Find the point of intersection.

c) Use the graph in b) to solve the system of linear equations.

2 $x + y = 5$
 $x - y = 2$

a) Copy and complete the tables of values for the system of linear equations.

x	0	1	2
y	5	?	?

x	0	1	2
y	?	-1	?

b) Graph $x + y = 5$ and $x - y = 2$ on the same coordinate plane. Find the point of intersection.

c) Use the graph in b) to solve the system of linear equations.

3 $x + 2y = 5$
 $2x - 2y = 1$

a) Graph $x + 2y = 5$ and $2x - 2y = 1$ on the same coordinate plane. Find the point of intersection of the graphs.

b) Use the graph in a) to solve the system of linear equations.

Course 3

Challenge-

*Solve created equations

“Pick a Snowflake”

*Real World Problem (website)

*BuzzMath



✓ **Lesson Check #5**– Can solve systems of linear equations using the graphical method

Ticket Out the Door- Connect, Extend, Challenge

1. How are the ideas and information presented **CONNECTED** to what you already knew?
2. What new ideas did you get that **EXTENDED** or pushed your thinking in new directions?
3. What is still **CHALLENGING** or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?