

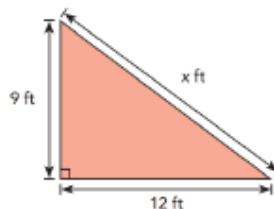
Lesson 5.1 Solving Systems of Linear Equations Using Tables

Week 1 Wednesday Course 3 Warm-up

Find the Slope
((19, -16) (-7, -15))



Merlin wants to put a fence around a right triangular garden. He measures two sides. Find the length of the unknown side.



Pythagorean Theorem

Simplify the Expression
Write in Exponential Notation

$$\frac{\left[\left(\frac{3}{5}\right) \cdot \left(\frac{3}{5}\right)^3\right]^4}{\left[\left(\frac{3}{5}\right)^2\right]^2}$$

Simplify Expression
Write as positive exponent

$$\frac{6^3 \cdot 15^3}{(7^0)^3}$$

Lesson 5.1 Solving Systems of Linear Equations Using Tables

Week 1 Wednesday Course 3 Warm-up

Find the Slope

$(19, -16)$ $(-7, -15)$

$$\frac{-15 - (-16)}{-7 - 19} = \frac{1}{-26}$$

Given two points:

(x_1, y_1) (x_2, y_2)

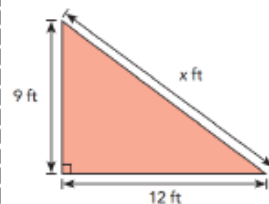
Slope Formula:

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

$$x_2 - x_1$$



Merlin wants to put a fence around a right triangular garden. He measures two sides. Find the length of the unknown side.



15

Pythagorean Theorem

Simplify the Expression
Write in Exponential Notation

$$\frac{\left[\left(\frac{3}{5}\right) \cdot \left(\frac{3}{5}\right)^3\right]^4}{\left[\left(\frac{3}{5}\right)^2\right]^2}$$

$$\left(\frac{3}{5}\right)^{12}$$

Simplify Expression
Write as positive exponent

$$\frac{6^3 \cdot 15^3}{(7^0)^3}$$

$$90^3$$

Lesson 5.1 Solving Systems of Linear Equations Using Tables

Objective

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

*Creating a table



▶ 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.

Mathematical Practices 2 Reason 3 Construct arguments 4 Model Mathematics

Create Vocabulary T-Chart

Definition

Linear Equation

An equation between two variables that gives a straight line when plotted on a graph

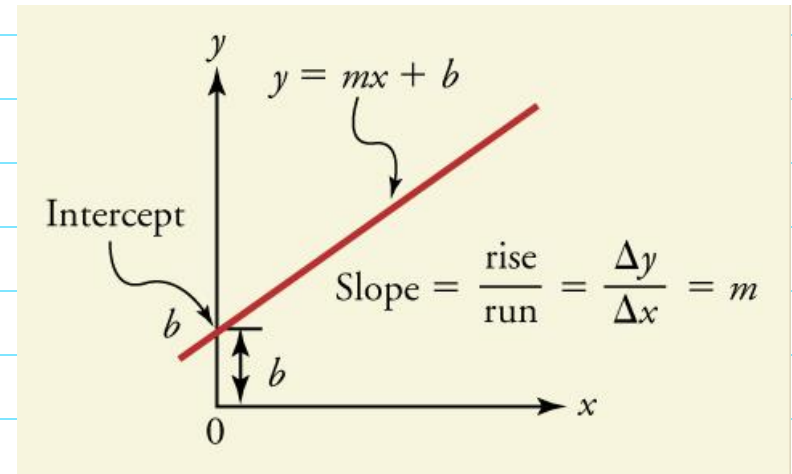
Systems of Linear Equations

(Use Glossary to write definition)

Unique Solution

(Use Glossary to write definition)

Visual



Create Vocabulary T-Chart

Definition

Linear Equation

An equation between two variables that gives a straight line when plotted on a graph

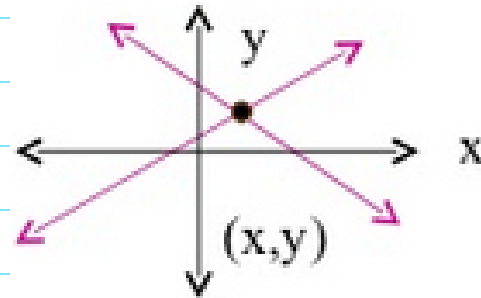
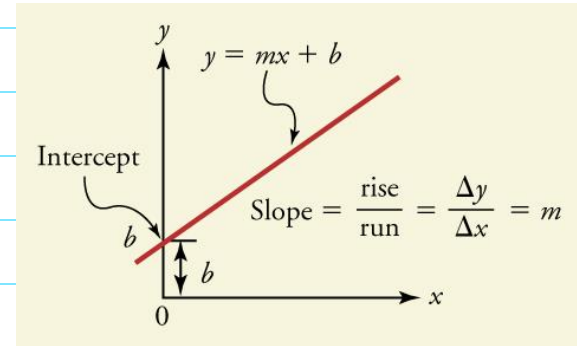
Systems of Linear Equations

A set of linear equations that has more than one variable.

Unique Solution

The single set of values that satisfies a system of linear equations

Visual



$$x - 2y = 0$$

$$x + y = 6$$

Lesson 5.1 Solving Systems of Linear Equations Using Tables

How to Solve System of Linear Equation by making table.

- 1). Substitute Values for x
- 2). Input in Table of Values
- 3.) Find the Unique Solution (Same in both tables)

Guided Practice

- 1 A bottle of water and a taco cost \$3. The cost of 3 bottles of water is \$1 more than the cost of a taco. Let x be the price of a bottle of water and y be the price of a taco in dollars. The related system of equations and tables of values are:

$$3x - y = 1$$

$$x + y = 3$$

x	1	2
y	?	?

x	1	2
y	?	?

Lesson 5.1 Solving Systems of Linear Equations Using Tables

How to Solve System of Linear Equation by making table.

- 1). Solve for x
- 2). Input in Table of Values
- 3.) Find the Unique Solution (Same in both tables)

Guided Practice

- 1 A bottle of water and a taco cost \$3. The cost of 3 bottles of water is \$1 more than the cost of a taco. Let x be the price of a bottle of water and y be the price of a taco in dollars. The related system of equations and tables of values are:

$$3x - y = 1$$

$$x + y = 3$$

x	1	2
y	?	?

x	1	2
y	?	?

Only the pair of values $x = \underline{\quad?}$ and $y = \underline{\quad?}$ appear in both tables. 1; 2

So, the solution to the system of equations is $x = \underline{\quad?}$, $y = \underline{\quad?}$. 1; 2

The cost of a bottle of water is \$ $\underline{\quad?}$ and the cost of a taco is \$ $\underline{\quad?}$. 1; 2

Lesson 5.1 Solving Systems of Linear Equations Using Tables

Solve each system of linear equations by making tables of values. Each variable x is a positive integer less than 6.

① $2x + y = 5$
 $x - y = -2$

② $x + 2y = 4$
 $x = 2y$

③ $3x + 2y = 10$
 $5x - 2y = 6$

Lesson 5.1 Solving Systems of Linear Equations Using Tables

Solve each system of linear equations by making tables of values. Each variable x is a positive integer less than 6.

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

2 $x + 2y = 4$
 $x = 2y$ $x = 2, y = 1$

3 $3x + 2y = 10$
 $5x - 2y = 6$ $x = 2, y = 2$

Lesson 5.1 Solving Systems of Linear Equations Using Tables

Independent Practice #7-10

Challenge-

*Solve created equations

“Pick a Snowflake”

*Create Word-toon for vocabulary words

Name: _____ Date: _____

Practice 5.1

Solve each system of linear equations by making tables of values. Each variable x is a positive integer less than 6.

1 $2x + y = 5$ $x - y = -2$	2 $x + 2y = 4$ $x = 2y$	3 $3x + 2y = 10$ $5x - 2y = 6$
4 $x - 2y = -5$ $x = y$	5 $2y - x = -2$ $x + y = 2$	6 $2x + y = 3$ $x + y = 1$
7 $x + 2y = 1$ $x - 2y = 5$	8 $2x - y = 5$ $2x + y = -1$	9 $2y + x = -1$ $x + y = 1$

Solve by making a table of values. The values x and y are integers.

10 A shop sells a party hat at x dollars and a mask at y dollars. On a particular morning, 10 hats and 20 masks were sold for \$30. In the afternoon, 8 hats and 10 masks were sold for \$18. The related system of linear equations is:

$$10x + 20y = 30$$

$$8x + 10y = 18$$

Solve the system of linear equations. Then find the cost of each hat and each mask.

11 Alicia is x years old and her cousin is y years old. Alicia is 2 times as old as her cousin. Three years later, their combined age will be 27 years. The related system of linear equations is:

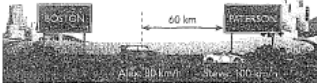
$$x = 2y$$

$$x + y = 21$$

Solve the system of linear equations. Then find Alicia's age and her cousin's age.

12 Steve and Alex start driving at the same time from Boston to Paterson. The journey is d kilometers. Steve drives at 100 kilometers per hour and takes t hours to complete the journey. Alex, who drives at 80 kilometers per hour, is 60 kilometers away from Paterson when Steve reaches Paterson. The related system of linear equations is:

$$100t = d$$

$$80t = d - 60$$


Solve the system of linear equations by making tables of values. Then find the distance between Boston and Paterson.

Name: _____ Wednesday Homework—Cumulative Review

Cumulative Review Chapters 3–4

Concepts and Skills

Solve each equation. Show your work. (Lesson 3.1)

1 $0.2(x + 2) - 2 = 0.4$	2 $2(x - 5) - 3(3 - x) = \frac{1}{2}(x - 2)$
3 $\frac{x}{3} + \frac{3+x}{6} = 3$	4 $\frac{2x+20}{3} - \frac{x-1}{2} = 2$

Express each decimal as a fraction, without the use of calculator. (Lesson 3.1)

5 0.5	6 0.8
7 0.27	8 0.09

Course 1

Lesson Check —#2 Can solve systems of equation by making tables of values.