

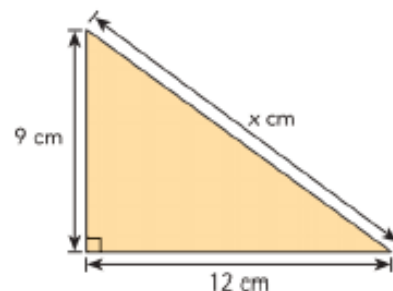
Lesson 5.2 Solving Systems of Linear Equations Using Elimination Method Day 3

Week 1 Thursday Course 3 Warm-up

Find the Slope
(19, -2) (-11, 10)



Pythagorean Theorem



Simplify the Expression
Write in Exponential Notation

$$\left[\left(-\frac{4}{9} \right)^2 \cdot \left(-\frac{4}{9} \right)^3 \right]^2$$

Simplify Expression
Write as positive exponent

$$(q^5 \cdot q^2)^3 \div 5q^5$$

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Week 1 Thursday Course 3 Warm-up

Find the Slope

(19, -2) (-11, 10)

$$\frac{10 - (-2)}{-11 - 19} = \frac{12}{-30} = \frac{-2}{5}$$

Given two points:

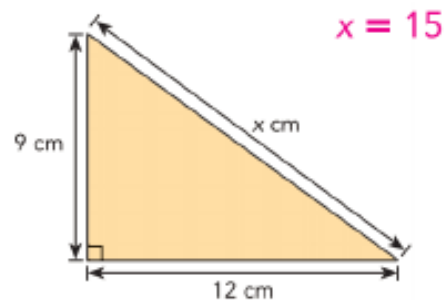
(x_1, y_1) (x_2, y_2)

Slope Formula:

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



Pythagorean Theorem



Simplify the Expression
Write in Exponential Notation

$$\left[\left(-\frac{4}{9} \right)^2 \cdot \left(-\frac{4}{9} \right)^3 \right]^2$$

$$\left(\frac{4}{9} \right)^{10}$$

Simplify Expression
Write as positive exponent

$$(q^5 \cdot q^2)^3 \div 5q^5$$

$$\frac{q^{16}}{5}$$

Lesson 5.2 Solving Systems of Linear Equations Using Elimination Method Day 3

Objective

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

* **Elimination Method with** and **without common terms**



▶ 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

Guided Practice

Solve each system of linear equations using the elimination method.

7 $3m - n = 7$
 $21m + 6n = -29$

Guided Practice

Solve each system of linear equations using the elimination method.

$$\begin{array}{l} \textcircled{7} \quad 3m - n = 7 \\ \quad \quad 21m + 6n = -29 \end{array} \quad \begin{array}{l} m = \frac{1}{3}, \\ n = -6 \end{array}$$

Guided Practice

Solve each system of linear equations using the elimination method.

8 $7a + b = 10$
 $2a + 3b = -8$

Guided Practice

Solve each system of linear equations using the elimination method.

8 $7a + b = 10$ $a = 2,$
 $2a + 3b = -8$ $b = -4$

Guided Practice

Solve each system of linear equations using the elimination method.

9
$$2p + 5q = 4$$
$$7p + 15q = 9$$

Guided Practice

Solve each system of linear equations using the elimination method.

$$\begin{array}{l} \textcircled{9} \quad 2p + 5q = 4 \quad p = -3, \\ \quad \quad 7p + 15q = 9 \quad q = 2 \end{array}$$

Lesson 5.2 Solving Systems of Linear Equations Using Elimination Method

Practice 5.2 #1-25

Practice 5.2

1 $\begin{cases} 2j + k = 6 \\ j - k = 8 \end{cases}$ 2 $\begin{cases} 2j + 3k = 11 \\ 2j - 5k = 3 \end{cases}$ 3 $\begin{cases} 3m + n = 30 \\ 2m - n = 20 \end{cases}$

4 $\begin{cases} 3x - y = 9 \\ 2x - y = 7 \end{cases}$ 5 $\begin{cases} 5s - t = 12 \\ 3s + t = 12 \end{cases}$ 6 $\begin{cases} 2b + c = 10 \\ 2b - c = 6 \end{cases}$

7 $\begin{cases} 3m - n = 7 \\ 21m + 4n = -29 \end{cases}$ 8 $\begin{cases} 7a + b = 10 \\ 2a + 2b = -8 \end{cases}$ 9 $\begin{cases} 2p + 5q = 4 \\ 7p + 15q = 9 \end{cases}$

Solve each system of linear equations using the substitution method.

10 $\begin{cases} 2j + k = 3 \\ k = j - 9 \end{cases}$ 11 $\begin{cases} 2h + 3k = 13 \\ h = 2k - 4 \end{cases}$ 12 $\begin{cases} 3m + b = 23 \\ m - b = 5 \end{cases}$

13 $\begin{cases} 3h - k = 10 \\ h - k = 2 \end{cases}$ 14 $\begin{cases} 3s - t = 5 \\ s + 2t = 4 \end{cases}$ 15 $\begin{cases} 2x + y = 20 \\ 3x + 4y = 40 \end{cases}$

16 $\begin{cases} 3x + 2y = 0 \\ 5x - 2y = 32 \end{cases}$ 17 $\begin{cases} 5x - y = 20 \\ 4x + 3y = 16 \end{cases}$ 18 $\begin{cases} 3p + 4q = 3 \\ \frac{1}{2} + q = 3p \end{cases}$

Solve each system of linear equations using the elimination method or substitution method. Explain why you choose each method.

19 $\begin{cases} 2x + 7y = 32 \\ 4x - 5y = -12 \end{cases}$ 20 $\begin{cases} 3x + 3y = 22 \\ 3x - 2y = 7 \end{cases}$ 21 $\begin{cases} 7m + 2n = 20 \\ 2m = 3n - 5 \end{cases}$

22 $\begin{cases} 3h - 4k = 35 \\ k = 2h - 20 \end{cases}$ 23 $\begin{cases} 2h + 7k = 32 \\ 3h - 2k = -2 \end{cases}$ 24 $\begin{cases} 2m + 4 = 3n \\ 5m - 3n = -1 \end{cases}$

Solve.

25 *Math Journal* Sam solves the following system of linear equations by the elimination method, without using calculator.

$$\begin{cases} 2x + 3y = 1 \\ 3x - 17y = 23 \end{cases}$$

He can multiply the first equation by 3 and the second equation by 2 in order to eliminate x . Or he can eliminate y by multiplying the first equation by 17 and the second equation by 3. Which way should Sam choose? Explain.

Challenge-#10,11,18,21,22,25

*Solve created equations

“Pick a Snowflake”

*Real World Problem (website)

*BuzzMath

The screenshot shows the BuzzMath website interface. At the top, there is a navigation bar with the user's name 'Angela Eaton', a 'Go Premium' button, and a search bar. Below the navigation bar, there is a dropdown menu for 'Common Core 8th Grade' and a list of math topics: 'Missions', 'Rational & Irrational Numbers, and Computation', 'Expressions and Equations', 'Relations, Functions and Coordinate Graphs', and 'Geometry and Measurement'. A 'View Content by Standards' button is also visible. On the right side, there is a 'Review' section with a list of topics: 'Multiplication and Division of Powers', 'Exponents: Squares and Cubes', 'Dividing and Using Exponents', 'Writing and Evaluating Numerical Expressions', 'Exponents: Powers with Positive Bases', 'Exponents: Powers with Negative Bases', 'Using Operations with Exponents', and 'Rational Numbers with Exponents: Decimal Bases'. Below this, there are sections for 'Section 1' and 'Section 2', each with a list of topics: 'Squares and Square Roots', 'Estimating Square Roots', 'Simplifying Square Roots', and 'Expanded Forms of Decimals II'.

Lesson Check #1-25 Can Solve Systems of linear equations using the elimination method

Lesson 5.2 Solving Systems of Linear Equations Using Elimination Method

Ticket Out the Door- 1 Better and 1 Puzzle

*Try to use key vocabulary

Systems of Linear equations, unique solution,
elimination method with/without common terms

1 thing I better understand after today's class is... _____

1 thing I am still puzzled about is... _____