

8 - CHAPTER 2: EQUATIONS IN ONE VARIABLE - NOTE PACKET

NAME: Miss Cramer

HOUR: 1st

Lesson 2.1: Solve Equations with Rational Coefficients

Vocabulary	
Term	Definition
Multiplicative Inverse	Reciprocal, or flipped version of a number $\frac{3}{4} \rightarrow \frac{4}{3}$ $\frac{16}{1} \rightarrow \frac{1}{16}$
Inverse Property of Multiplication	The product of a number and its reciprocal equals 1. $-\frac{2}{3} \cdot -\frac{3}{2} = 1$
Coefficient	Numerical factor of a term that contains a variable $3a$ $\frac{2}{5}b$
Variable	a letter that represents an unknown value. $172z$

How to solve an equation with a...

Fraction Coefficient	$(\frac{4}{3})\frac{3}{4}c = 18(\frac{4}{3})$ $c = 24$ Multiply both sides by the coefficient's reciprocal
Decimal Coefficient	Divide by the coefficient on both sides. $\frac{3.15}{0.45} = \frac{0.45n}{0.45}$ $n = 7$

Lesson 2.2: Solve Two-Step Equations

Vocabulary	
Properties	a statement that is true for all numbers.

8 - CHAPTER 2: EQUATIONS IN ONE VARIABLE - NOTE PACKET

Properties of Equality	
Addition Property of Equality	When you add the same number to both sides. * subtraction * negative constant $x - 2 = 13$ $\quad \quad \quad +2 \quad +2$ $x = 15$
Subtraction Property of Equality	When you subtract the same number from both sides. * addition * positive constant $y + 3 = 25$ $\quad \quad \quad -3 \quad -3$ $y = 22$
Multiplication Property of Equality	When you multiply the same number to both sides. * division * fraction coefficient $10 \cdot \frac{w}{10} = 24 \cdot 10$ $w = 240$
Division Property of Equality	When you divide the same number to both sides. * multiplication $\frac{2m}{2} = \frac{120}{2}$ $m = 60$

Order of Operations
Parentheses
Exponents
Multiplication Division L → R
Addition Subtraction L → R



Two-Step Equations	
Step	Example
Subtraction P.O.E	$2x + 3 = 7$ $\quad \quad \quad -3 \quad -3$ $2x = 4$
Division P.O.E	$\frac{2x}{2} = \frac{4}{2}$ $x = 2$

8 - CHAPTER 2: EQUATIONS IN ONE VARIABLE - NOTE PACKET

NAME: _____

HOUR: _____

Lesson 2.3: Write Two-Step Equations

Steps	
Words	Describe the situation. Use only the most important words.
Variable	Define a variable to represent the unknown quantity
Equation	Translate your verbal into algebraic equation

Lesson 2.4: Solve Equations with Variables on Each Side

Key Concept	
First Step	Get the variable to one side $8 + 4d = 5d$ $\begin{array}{r} 8 + 4d = 5d \\ -4d \quad -4d \\ \hline 8 = 1d \\ 8 = d \end{array}$

Lesson 2.5: Solve Multi-Step Equations

Vocabulary			
Distributive Property	Distribute what is outside the parentheses to what is inside. $9(3 + 2x) = 27 + 18x$		
Number of Solutions			
	Words	Symbols	Example
Null Set	No Solution	$a = b$	$\begin{array}{r} 3x + 4 = 3x \\ -3x \quad -3x \\ \hline 4 \neq 0 \end{array}$
One Solution	One Solution	$x = a$	$\begin{array}{r} 2x = 20 \\ \frac{2x}{2} = \frac{20}{2} \\ x = 10 \end{array}$
Identity	Infinitely Many Solutions	$a = a$	$\begin{array}{r} 4x + 2 = 4x + 2 \\ -4x \quad -4x \\ \hline 2 = 2 \end{array}$

