

Equations and Inequalities - Pre-3

Topic: Equations and Inequalities

Date:

Objectives: SWBAT (Solve multi-step equations and inequalities)

Main Ideas:	Assignment:
Steps to Solving Linear	<p>#1) Do you have any grouping symbols like () or []? Yes No</p> <p>#2) Do you have like terms on either side of the equal sign? Yes No</p> <p>#3) Do you have variables on both sides of the equal sign? Yes No</p> <p>#4) Do you have constant on the side of the equation that the variable is on? Yes No</p> <p>#5) Do you have a coefficient attached to the variable other than 1? Yes No</p> <p>Example:</p> $2(4x - 7) + 15 = 8$ <p>Check:</p> $2(4(\underline{\quad}) - 7) + 15 = 8$
Properties	<p>Addition Property of Equality</p> <p>Subtraction Property of Equality</p> <p>Multiplication Property of Equality</p> <p>Division Property of Equality</p> <p>Distributive Property</p> <p>Identity – Infinitely Many Solutions</p> $x + 2 = x + 2$ <p>No Solution</p> $x = x + 1$

Justify	$3x - 5 = x + 2 - 7x$	<i><u>Justification</u></i>
	$3(x - 2) + 3 = 2(6 - x)$	<i><u>Justification</u></i>
	$5(2x - 7) + 2 = 3(4 - x) - 12$	<i><u>Justification</u></i>
Fraction Bust	$\frac{x}{2} - \frac{7}{9} = \frac{x}{6} + \frac{2}{3}$	<i><u>Justification</u></i>
Inequalities	<u>What is the flip-flop rule of solving linear inequalities</u>	

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Examples	$5(x - 2) \geq 9x - 3(2x - 4)$	$4(2x - 1) > 3x - 2(3x - 5)$
Compound Inequalities	<p>Compound Inequalities are formed by joining two inequalities with a connective word such as “and” or “or”.</p> <p>Example:</p> $2x < 4 \text{ and } 3x - 2 > -8$ $2x + 3 > 5 \text{ or } x + 2 < 5$ <p>The solution set of a compound inequality with the connective word “and” is the set of all elements that the inequalities have in common.....this is called an <u>intersection</u></p> $\text{Solve: } 2x < 6 \text{ and } 3x + 2 > -4$ <p>The solution set of a compound inequality with the connective word “or” is the set of all elements for both inequalities.....this is called a <u>union</u></p> $2x + 3 > 7 \text{ or } 4x - 1 < 3$	

Examples

$$1 < 3x - 5 < 4$$

$$11 - 2x > -3 \text{ and } 7 - 3x < 4$$

$$3 - 4x > 7 \text{ or } 4x + 5 < 9$$

$$-\frac{3}{8} \leq 1 - \frac{1}{4}x \leq \frac{7}{2}$$