

Topics:

- Sets of Numbers (real numbers, rational numbers, integers, whole numbers, natural numbers)
 - Properties of Real Numbers (associative, commutative, distributive, identity, inverse)
 - Closure
 - Solving Inequalities
 - Solving Absolute Value Equations
 - Solving Absolute Value Inequalities
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Practice Problems:

1. Solve and graph the solution set on a number line: $4 - 5x \leq 29$
2. Solve and graph the solution set on a number line: $(2x + 7 < 7) \wedge (3x + 1 \geq -5)$
3. Solve and graph the solution set on a number line: $(-10x \leq 40) \vee (x - 4 < -9)$
4. State the solution set: $(x > 3) \vee (x \leq 3)$
5. Name the property illustrated in the equation $2(a + b) + g = 2(b + a) + g$.
6.
 - a. Write an equation that illustrates the associative property of addition.
 - b. Write an equation that illustrates the multiplicative identity property.
7. Tell whether each set is closed under the given operation. Write either *closed* or *not closed*. If it is not closed, give a counterexample.
 - a. $\{0, 1, -1\}$ under addition
 - b. $\{0, 1, -1\}$ under division
 - c. $\{1, \frac{1}{3}, \frac{1}{9}, \frac{1}{27}, \dots\}$ under multiplication
8. Solve: $|x| = 4$
9. Solve: $|x + 10| = 9$
10. Solve: $|2x - 7| + 4 = 13$
11. Solve: $|6 - 3x| = 7x$
12. Solve and graph the solution set on a number line: $|x| < 9$
13. Solve and graph the solution set on a number line: $|x| \geq 7$
14. Solve and graph the solution set on a number line: $|x - 2| < 3$
15. Solve and graph the solution set on a number line: $|x + 6| > 7$