

Algebra 2: Absolute Values and Inequalities

Algebraic Definition of Absolute Value:

$| \# | \rightarrow$ Opposite of $\#$

Example:

If $x \geq 0$, then $| x | = x$

If $x \leq 0$, then $| x | = -x$

If $x = -1$

Then $| x | = 1$

ALWAYS CHECK YOUR ANSWERS FOR EXTRANEIOUS SOLUTIONS!!!

Example Problems:

Work through on your own. Answers at the end.

(1) $| 15 - 3x | = 6$

$$15 - 3x = 6$$

$$-3x = -9$$

$$x = 3$$

$$15 - 3x = -6$$

$$-3x = -21$$

$$x = 7$$

CHECK!! They should both work.

(2) $| 3x - 4 | = -4x - 1$

Solving and Graphing Absolute Value Inequalities

(1) $| x | \leq 5$

$$-5 \leq x \leq 5$$

Solutions:

