

Section 1.7: Equations and Inequalities Including Absolute Value

Key Topics: absolute value equations, absolute value inequalities

Solutions of $|u| = a, a \geq 0$

If $a \geq 0$ and u is an algebraic expression, then

$|u| = \underline{\hspace{1cm}}$ is equivalent to $u = a$ or $u = -a$.

$|u| = \underline{\hspace{1cm}}$ has $\underline{\hspace{1cm}}$ solution when $\underline{\hspace{1cm}}$.

Rules for Solving Absolute Value Inequalities

If $a > 0$ and u is an algebraic expression, then

1. $|u| < a$ is equivalent to $\underline{\hspace{1cm}}$, or u in $\underline{\hspace{1cm}}$.
2. $|u| \leq a$ is equivalent to $\underline{\hspace{1cm}}$, or u in $\underline{\hspace{1cm}}$.
3. $|u| > a$ is equivalent to $\underline{\hspace{1cm}}$, or u in $\underline{\hspace{1cm}}$.
4. $|u| \geq a$ is equivalent to $\underline{\hspace{1cm}}$, or u in $\underline{\hspace{1cm}}$.

Work the Practice Problems in this section.