Absolute Value Inequalities SEQINS

Similar to absolute value equations ➔ you need to solve 2 problems

Steps:

1) Isolate the absolute value term using inverse operations

2) Solve the inequality present (without the absolute-value symbol) **AND** the opposite of the absolute-value expression (without the absolute-value symbol).

3) Write your two solutions as a compound inequality.

$|ax + b| < c$ (AND) lessTHAN

$|ax + b| > c$ (OR) greatER

4) Check that your answer makes sense with substitution.

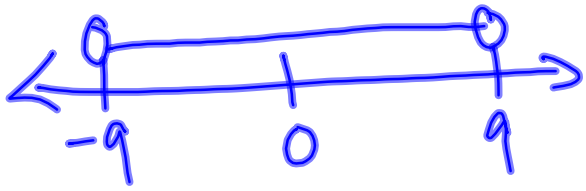
Ex: $|x| + 3 < 12$

$-3 \quad -3$

$|x| < 9$

$x < 9$ AND $x > -9$

When the abs-value expression is less than the constant ➔ it is using AND



Ex: $2|x| \geq 6$

$\frac{2}{2} \quad \frac{|2|}{2}$

$|x| \geq 3$

$x \geq 3$ OR $x \leq -3$

When the abs-value expression is greater than the constant ➔ it is using OR