

Algebra II

2-4

Absolute Value

What is the purpose of absolute value? *Measuring distance.*

When solving, how do we undo an absolute value?

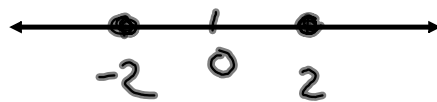
Put \pm on the other side.

Solve:


$$|x| = 2$$

$$x = \pm 2$$

$$\{\pm 2\}$$



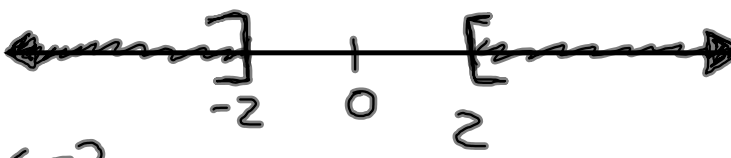
Solve: $|x| < 2$ *Less than*



A number line with tick marks at -2, 0, and 2. A double-headed arrow is drawn between -2 and 2, with the word "between" written in parentheses above the line.

$x < 2$ and $x > -2$

Solve: $|x| \geq 2$ *greater or*



A number line with tick marks at -2, 0, and 2. Two arrows are drawn: one starting at -2 and pointing left, and another starting at 2 and pointing right. Both arrows have brackets at their starting points, indicating that the values -2 and 2 are included in the solution set.

$x \geq 2$ $x \leq -2$

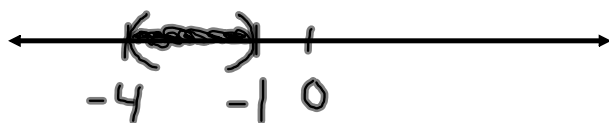
Solve and graph the solution set. pg 75

$$9) |2t + 5| < 3$$

$$2t + 5 < 3 \text{ and } 2t + 5 > -3$$

$$2t < -2 \quad 2t > -8$$

$$t < -1 \quad t > -4$$



$$15) 0 \leq |4u - 7|$$

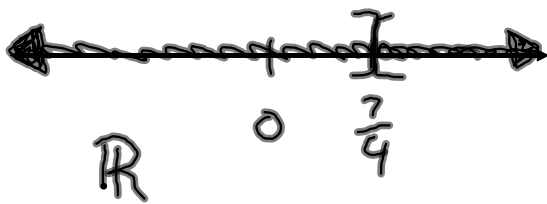
$$0 \leq 4u - 7 \text{ or } -0 \geq 4u - 7$$

$$7 \leq 4u$$

$$7 \geq 4u$$

$$\frac{7}{4} \leq u$$

$$\frac{7}{4} \geq u$$



$$23) \underset{-7}{7} - 3 |4d - 7| \underset{-7}{\geq} 4$$

$$\frac{-3 |4d - 7|}{-3} \geq \frac{-3}{-3}$$

$$|4d - 7| \leq 1$$

$$4d - 7 \leq 1 \text{ and } 4d - 7 \geq -1$$

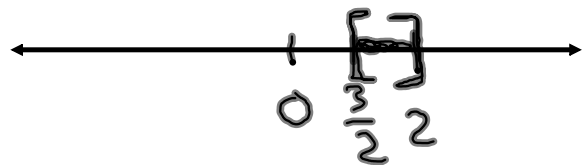
$$4d \leq 8$$

$$d \leq 2$$

$$4d \geq 6$$

$$d \geq \frac{6}{4}$$

$$d \geq \frac{3}{2}$$



Assignment:

Pg. 75

2 - 32 even