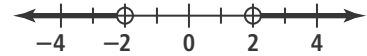# 1-7 Reteach to Build Understanding

Absolute Value Equations and Inequalities

The absolute value is positive.
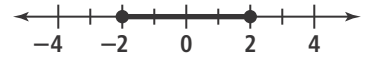

$$5|x - 3| = 20$$
$$x - 3 = -4$$

The absolute value is negative.

The equation has no solution because no value of x makes the equation true.

The graph of the solutions for an absolute value inequality using $>$ or $\geq$, or a compound inequality using *or*.

$$5|x - 3| = 20$$
$$x - 3 = 4$$

The graph of the solutions for an absolute value inequality using $<$ or $\leq$, or a compound inequality using *and*.

$$|x + 10| = -9$$

1. Complete the solution of the equation $|t - 7| = 8$.

   Think: "The value of the quantity $t - 7$ can be 8 or -8."

   Rewrite $|t - 7| = 8$ as $t - 7 = 8$ or _____.

   $t - 7 + 7 = 8 + 7$ or   _____   Add 7 to each side to isolate t.

   _____   or   _____   Simplify.

2. Tavon says that for the absolute value inequality $|z| < 6$, you read the inequality as "z is less than 6 away from zero." Marta believes you read the inequality as "z is less than 6." Who is correct? Explain.

3. Complete the table below for each absolute value inequality.

Inequality	Solution	Graph
$|x - 3| > 5$	_____	
$|n + 1| \leq 7$	$-8 \leq n \leq 6$	
$|d + 4| < 3$	_____	
$|f - 5| \geq 1$	$f \geq 6$ or $f \leq 4$	