

WARM-UP

Solve:

$$\textcircled{1} \quad 3|x+1| - 4 = 5$$

$$\frac{3|x+1|}{3} = \frac{9}{3}$$

$$|x+1| = 3$$

$$\begin{array}{r} x+1=3 \\ -x-1 \\ \hline x=2 \end{array}$$

$$\left. \begin{array}{r} x+1=-3 \\ -x-1 \\ \hline x=-4 \end{array} \right\}$$

Test
FRIDAY

$$\textcircled{2} \quad |5x+5| = 20$$

$$\begin{array}{l} 5x+5=20 \\ 5x=15 \\ x=3 \end{array} \left\{ \begin{array}{l} 5x+5=-20 \\ -5 \quad -5 \\ \hline 5x=-25 \\ \frac{5}{5} \quad \frac{5}{5} \\ x=-5 \end{array} \right.$$

Homework

1. a $3|x-6|=15$

$|x-6|=5$

$x-6=5$ { $x-6=-5$

$x=11$ { $x=1$

c. $|-3x+3|=24$

$-3x+3=24$ { $-3x+3=-24$

$-3x=21$ { $-3x=-27$

$x=-7$ { $x=9$

⑨ $\frac{|3v-2|}{4} = 3$

$|3v-2|=12$

$3v-2=12$ { $3v-2=-12$

$3v=14$ { $3v=-10$

$v = \frac{14}{3}$ { $v = -\frac{10}{3}$

b. $-4|x+4|=20$

$x+4=-5$ { $x+4=5$

$x=-9$ { $x=1$

extraneous

d. $8|n+40|-6=10$

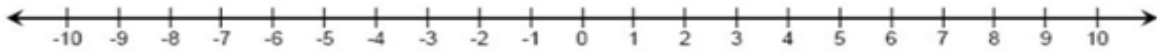
$8|n+40|=16$

$|n+40|=2$

$n+40=2$ { $n+40=-2$

$x=-38$ { $n=-42$

Absolute Value Inequalities



- \geq Greater Than is an OR statement
- $>$ Greater Than is an OR statement
- \leq Less Than is an AND statement
- $<$ Less Than is an AND statement

	I DO	WE DO	YOU DO
4.	<p>Solve and graph $2x + 3 > 11$</p> <p>$2x + 3 > 11$ $2x > 8$ $x > 4$</p> <p>$2x + 3 < -11$ $2x < -14$ $x < -7$</p>	<p>Solve and graph $5x - 3 > 27$</p> <p>$5x - 3 > 27$ $5x > 30$ $x > 6$</p> <p>$5x - 3 < -27$ $5x < -24$ $x < -24/5$</p>	<p>Solve and graph $4x + 1 > 9$</p> <p>$4x + 1 > 9$ $4x > 8$ $x > 2$</p> <p>$4x + 1 < -9$ $4x < -10$ $x < -10/4$</p>
5.	<p>Solve and graph $10x - 8x + 7 \leq 19$</p> <p>$2x \leq 16$</p> <p>$2x \leq 16$ $x \leq 8$</p> <p>$2x \geq -16$ $x \geq -8$</p>	<p>Solve and graph $3x + 2x - 10 < 20$</p> <p>$5x < 30$</p> <p>$5x < 30$ $x < 6$</p> <p>$5x > -30$ $x > -6$</p>	<p>Solve and graph $4x + 3x \leq 21$</p> <p>$7x \leq 21$</p> <p>$7x \leq 21$ $x \leq 3$</p> <p>$7x \geq -21$ $x \geq -3$</p>
6.	<p>Solve and graph $x + 3 \geq 18$</p> <p>$x + 3 \geq 18$ $x \geq 15$</p> <p>$x + 3 \leq -18$ $x \leq -21$</p>	<p>Solve and graph $x - 5 \leq 40$</p> <p>$x - 5 \leq 40$ $x \leq 45$</p> <p>$x - 5 \geq -40$ $x \geq -35$</p>	<p>Solve and graph $x + 7 \geq 22$</p> <p>$x + 7 \geq 22$ $x \geq 15$</p> <p>$x + 7 \leq -22$ $x \leq -29$</p>