

multi-step equations
 multi-step inequalities
 compound inequalities
 absolute value equations
 absolute value inequalities

1 Distribute
 2 Combine Like Terms

6) $-3(4x + 6) > -111$

$$\begin{array}{r} (-3) - 24x - 36 > -111 \\ \cancel{-39} - 24x > \cancel{-111} + 39 \\ -24x > -72 \\ \hline -24 & -24 \end{array}$$

$x < 3$

Oct 23-11:37 AM

Oct 23-11:40 AM

9) $167 < 6 + 7(2 - 7r)$

$$\begin{aligned} 167 &< 6 + 14 - 49r \\ 167 &< 20 - 49r \\ -20 &\quad -20 \\ \hline 147 &< -49r \\ -49 &\quad -49 \\ \hline -3 &>r \\ r &< -3 \end{aligned}$$

3) $2x < 10 \text{ or } \frac{x}{2} \geq 3$

$$\begin{aligned} \frac{2x}{2} &< \frac{10}{2} & (2) \frac{x}{2} &\geq 3(2) \\ x &< 5 & \text{OR} & x \geq 6 \end{aligned}$$

Oct 23-11:53 AM

Oct 23-11:57 AM

9) $-1 + 5n > -26 \text{ and } 7n - 2 \leq 12$

$$\begin{aligned} \frac{5n}{5} &> \frac{-25}{5} & \frac{7n}{7} &\leq \frac{14}{7} \\ n &> -5 & n &\leq 2 \end{aligned}$$

10) $-50 < 7k + 6 < -8$

$$\begin{aligned} \frac{-50 - 6}{7} &< k & \frac{-6 - 8}{7} &< k \\ \frac{-56}{7} &< k & \frac{-14}{7} &< k \\ -8 &< k & -2 &< k \end{aligned}$$

18) $-10|v+2| = -70$

ABSOLUTE Value Equation

ISolate $|x|$
 If $|x|=0$ 1 answer
 $|x|=\#$ N/S
 $|x|=\#+\#$ 2 solutions

$$\begin{aligned} |v+2| &= 7 \\ v+2 &= 7 & v+2 &= -7 \\ -2 &-2 & -2 &-2 \\ \hline v &= 5 & v &= -9 \end{aligned}$$

Oct 23-12:00 PM

Oct 23-12:11 PM

$$|x+2| = -3$$

N/S

3) $|k-10| = 3$

4) $\left|\frac{x}{7}\right| = 3$

5) $|7+p| = 7$

6) $|-3p| = 15$

7) $7|n| = 56$

8) $\frac{|m|}{5} = 3$

9) $-3|p| = -12$

10) $|m| + 2 = 11$

11) $|n| + 1 = 2$

12) $\frac{|x|}{7} = 5$

Oct 23-12:17 PM

Oct 23-12:18 PM

\leq and
 $>$ or

$$1) \left| \frac{n}{4} \right| \leq 3 \rightarrow \frac{n}{4} \leq 3 \quad \& \quad \frac{n}{4} \geq -3$$

$$n \leq 12 \quad \& \quad n \geq -12$$

$|-9v| \leq 54$

$\frac{-9v \leq 54}{-9} \text{ AND } \frac{-9v \geq -54}{-9}$

$v \geq -6 \quad \& \quad v \leq 6$

Oct 23-12:22 PM

Oct 23-12:25 PM

- wrap up quiz
1. $7(x-5) + 12 = 5$
 2. $6w + 3 < 2w + 15$
 3. $3x + 5 \leq 1$ or $8-x \leq 5$
 4. $-7 < x-8 \leq 2$
 5. $2|6x+5|-1 = 25$
 6. $-3 + |n-2| \geq 5$

Oct 23-2:26 PM