Warm-Up

Simplify ↓

1) $|-10+8| = |-2| = 2$

2) $|12 - 12| = 24$

3) $-1 \cdot |-7|$

$-1 \cdot 7$

-7

Solve ↓

4) $|c-2| = 6$

5) $|7d| = 14$

6) $\left|\frac{x}{4} + 5\right| = 7$

4) $|c-2| = 6$

$c-2 = -6$ $\quad$ $c-2 = 6$

$+2 \quad +2$ $\quad$ $+2 \quad +2$

$c = -4$ $\quad$ $c = 8$

5) $|7d| = 14$

$\frac{7d}{7} = \frac{14}{7}$ $\quad$ $\frac{7d}{7} = \frac{-14}{7}$

$d = 2$ $\quad$ $d = -2$

6) $\left|\frac{x}{4} + 5\right| = 7$

$\frac{x}{4} + 5 = -7$ $\quad$ $\frac{x}{4} + 5 = 7$

$-5 \quad -5$ $\quad$ $-5 \quad -5$

$\frac{x}{4} = -12$ $\quad$ $\frac{x}{4} = 2$

$4 \cdot \frac{x}{4} = -12 \cdot 4$ $\quad$ $4 \cdot \frac{x}{4} = 2 \cdot 4$

$x = -48$ $\quad$ $x = 8$

$\frac{x}{4} + 5$

Notes: More Absolute Value

Simple Abs. Value Steps

SPLIT: Keep inside, ± #

Solve equation

generally have 2 answers

* When does a no solution happen?

ex. $|x+4| = -3$

More tricky Absolute Value Equations

$|x-2|+3=5$

$-3 \quad -3$

isolate

$|x-2|=2$

$x-2=2 \qquad x-2=-2$

$+2 \quad +2 \qquad +2 \quad +2$

$x=4 \qquad x=0$

$|2x-1|-3=2$

$+3 \quad +3$

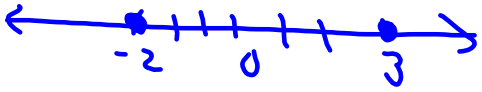
$|2x-1|=5$

$2x-1=5 \qquad 2x-1=-5$

$+1 \quad +1 \qquad +1 \quad +1$

$\frac{2x}{2}=\frac{6}{2} \qquad \frac{2x}{2}=\frac{-4}{2}$

$x=3 \qquad x=-2$



$2|3x+9|-10=-4$

$+10 \quad +10$

cannot distribute

$\frac{2}{2}|3x+9|=\frac{6}{2}$

$|3x+9|=3$

$3x+9=-3 \qquad 3x+9=3$

$-9 \quad -9 \qquad -9 \quad -9$

$\frac{3x}{3}=\frac{-12}{3} \qquad \frac{3x}{3}=\frac{-6}{3}$

$x=-4 \qquad x=-2$

Try & Check-in w/ Mrs. Masse

1) $|x-2|+5=9$

2) $4|2x+7|=16$

3) $-2|5x-1|-3=-11$