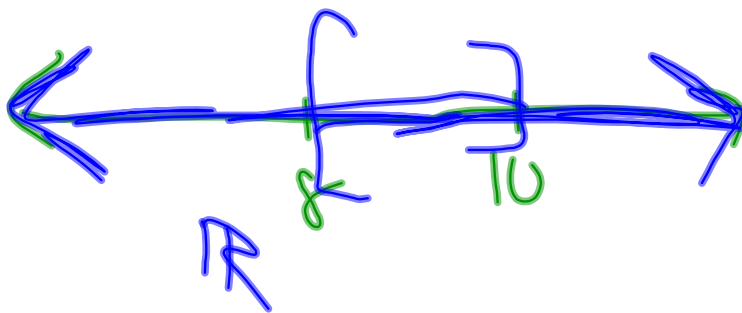


6?

$$\underline{6 - \frac{x}{2} \geq 1} \quad \text{or} \quad \underline{\frac{5}{4}x - 6 \geq 4}$$

$$\cancel{-2 \cdot} \frac{x}{2} \geq \cancel{-5 \cdot 2} \quad \cancel{\frac{4}{5} \cdot} \frac{5}{4}x \geq \cancel{10 \cdot \frac{4}{5}}$$

$$x \leq 10 \quad \text{or} \quad x \geq 8$$



0-7+  
8-15 ✓  
16 ↑ -

### 3.5 Absolute value Equations

$$|x| = 5$$

$$| \quad x = 5 \quad x = -5$$

$$\text{Ex: } |3x + 4| = 10$$

$$3x + 4 = 10 \quad \text{or} \quad 3x + 4 = -10$$

-4    -4                      -4    -4

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$$\frac{3x}{3} = \frac{6}{3}$$

$$x = 2$$

or

$$\frac{3x}{3} = \frac{-14}{3}$$

$$x = -\frac{14}{3}$$

$$\text{Ex: } |2x-1| + 3 = 8$$

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$$|2x-1| = 5$$

$$\begin{array}{l} 2x-1=5 \quad \text{or} \quad 2x-1=-5 \\ \hline +1 \quad +1 \\ \hline 2x=6 \\ \frac{2x}{2} = \frac{6}{2} \\ x=3 \end{array} \quad \text{or} \quad \begin{array}{l} 2x-1=-5 \\ \hline +1 \quad +1 \\ \hline 2x=-4 \\ \frac{2x}{2} = \frac{-4}{2} \\ x=-2 \end{array}$$

$x=3$  or  $x=-2$

Ex:

$$|x+5| = |x+10|$$

$$\begin{array}{r} x+5 = x+10 \\ \hline \cancel{-x} \quad \cancel{-x} \\ \hline \cancel{5} = \cancel{10} \end{array}$$

$$\begin{array}{r} \text{or } x+5 = -x-10 \\ \hline \cancel{+x} \quad \quad \quad \cancel{+x} \\ \hline 2x+5 = -10 \\ \quad \quad \quad \cancel{-5} \quad \quad \quad \cancel{-5} \end{array}$$

$$\frac{2x}{2} = \frac{-15}{2}$$

$$x = -\frac{15}{2}$$

$$\text{Ex: } |x-2| = -7$$

No solution

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

$$|-5| = 5$$

$$|3| = 3$$

$$|-\frac{1}{7}| = \frac{1}{7}$$

HW: 7. 220

2-50 even  
odds extra  
credit