

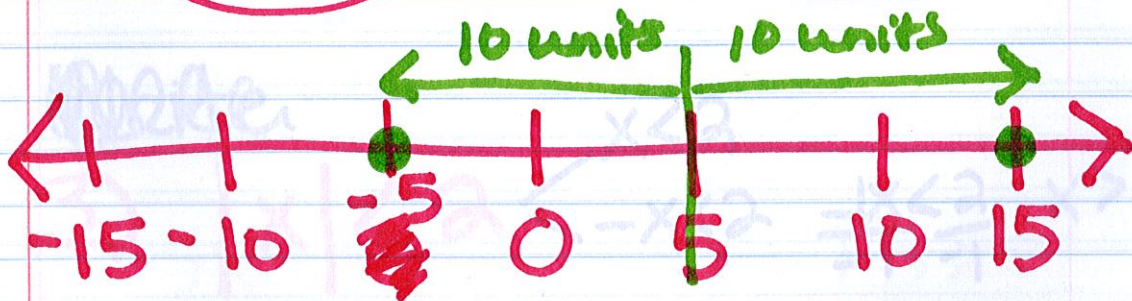
## 4-5 Solving Open Sentences Involving Absolute Values

$$|x|=5 \rightarrow \begin{array}{l} x=5 \\ -x=5 \end{array} \quad \frac{-|x|=5}{-1 \quad -1} \quad x=-5$$

1.)  $|x-5|=10$

$$\begin{array}{r|l} x-5 & = 10 \\ +5 & +5 \\ \hline & x=15 \end{array}$$

$$\begin{array}{r|l} x-5 & = -10 \\ +5 & +5 \\ \hline & x=-5 \end{array}$$



$$\{-5, 15\}$$

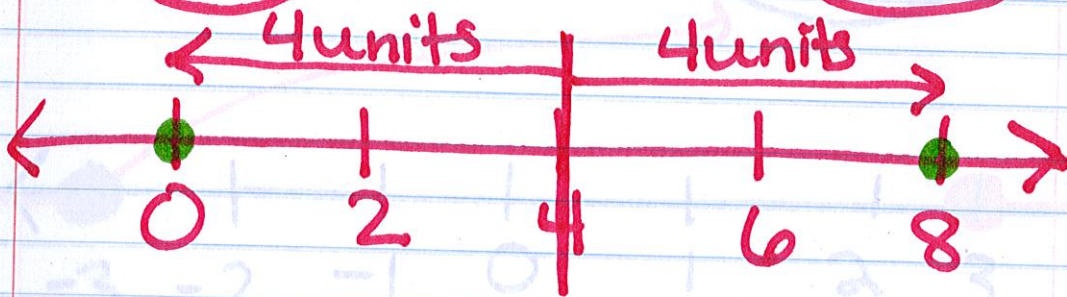
$$2.) |x-4|=4$$

$$\begin{array}{r} x-4=4 \\ +4 \quad +4 \\ \hline \end{array}$$

$$x=8$$

$$\begin{array}{r} x-4=-4 \\ +4 \quad +4 \\ \hline \end{array}$$

$$x=0$$



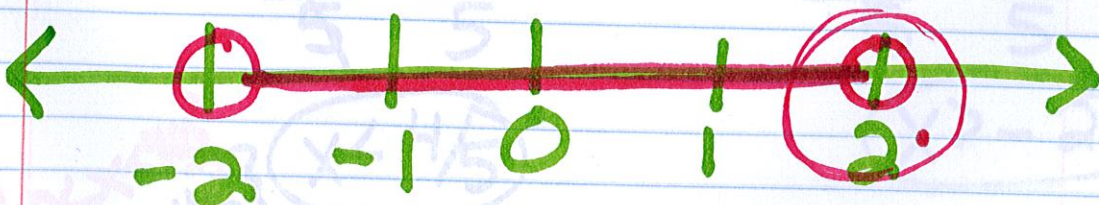
$$\{0, 8\}$$

~~Write~~

$$3.) |x| < 2 \begin{cases} x < 2 \\ -x < 2 \end{cases} \begin{array}{l} \div -1 \\ \div -1 \end{array} \begin{cases} x < 2 \\ x > -2 \end{cases}$$

$$x < 2$$

$$x > -2$$



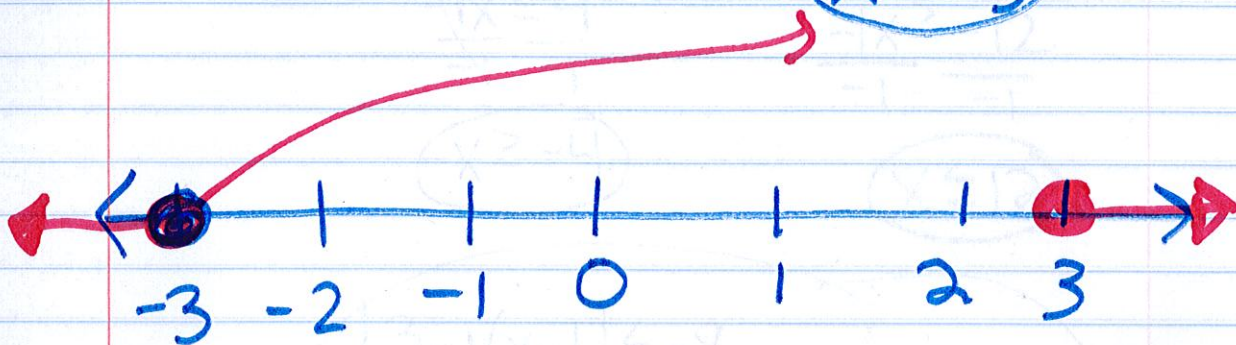
$$\{x | -2 < x < 2\}$$

$$4.) |7x| \geq 21$$

$$\frac{7x \geq 21}{7} \\ x \geq 3$$

$$\frac{7x \leq -21}{7} \\ x \leq -3$$

flip  
neg.



$$\{x \mid x \leq -3 \text{ or } x \geq 3\}$$

$$5.) |5x + 3| < 7$$

$$\frac{5x + 3 < 7}{-3 \quad -3} \\ \frac{5x < 4}{5 \quad 5} \\ x < \frac{4}{5}$$

$$\frac{5x + 3 > -7}{-3 \quad -3} \\ \frac{5x > -10}{5 \quad 5} \\ x > -2$$

$$\{x \mid -2 < x < \frac{4}{5}\}$$

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

$$x > -2$$

