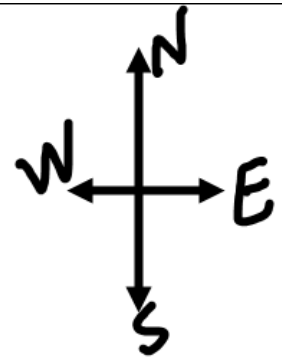
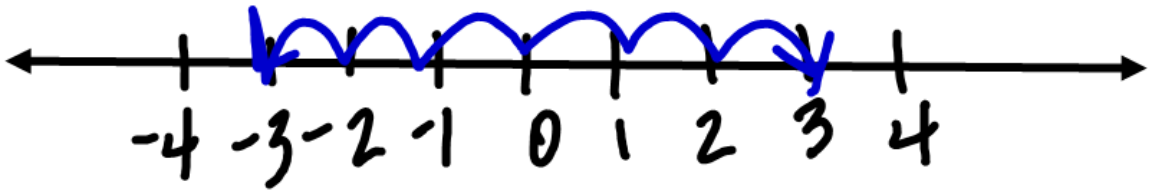
Absolute Value





$|3| = 3$ $|-3| = 3$

Solve $|x| = 3$

$x = 3$ or -3

Equality

$|7| = 7$

$|-7| = 7$

$|x-4| = 7$

Set up 2 equations

$x - 4 = 7$ OR $x - 4 = -7$

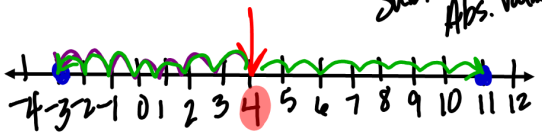
$+4 \quad +4 \quad +4 \quad +4$

Solve

$x = 11$ OR $x = -3$

$|x-4| = 7$

Distance between 2 pts
Subtract
Abs. Value



The distance between a number and 4 is 7

$|x+2| = 5$

Set up 2 equations

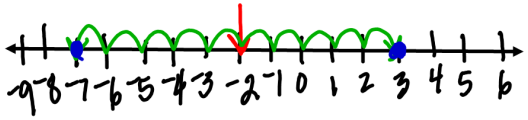
$x + 2 = 5$ OR $x + 2 = -5$

$x = 3$ OR $x = -7$

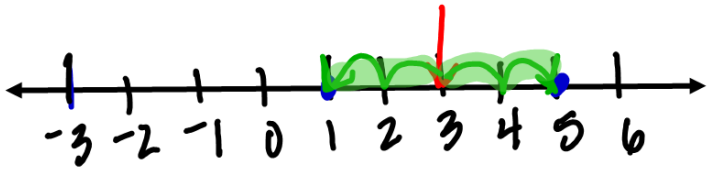
$|x+2| = 5$

$|x-(-2)| = 5$

Distance
• Subtract
• Absolute Value



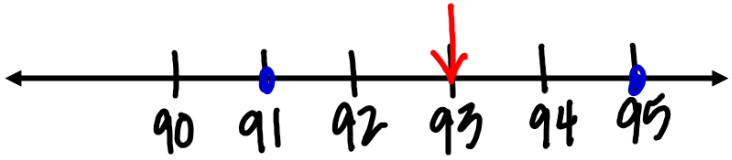
The distance between a number and negative 2 is 5.

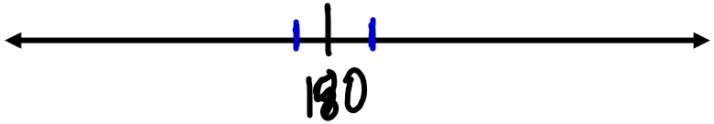


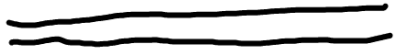
$x = 1$ or $x = 5$

The distance between a number and 3 is 2.

$|x - 3| = 2$







$$-|x-7| = 8$$

$\div -1 \qquad \div -1$

$$|x-7| = -8$$

No Solution

$$-|x-3| = -4$$

$\div -1 \qquad \div -1$

$$|x-3| = 4$$

$+3 \qquad +3$

$x-3 = 4$ OR $x-3 = -4$

$+3 \qquad +3$

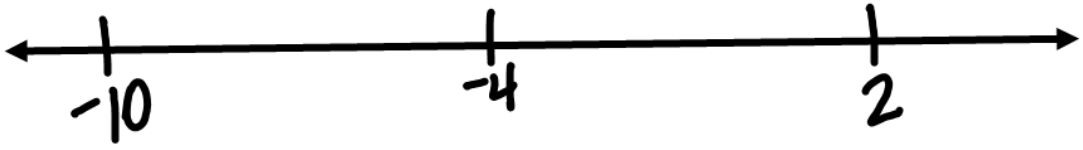
$x = 7$ OR $x = -1$

$|x+4| + 2 = 8$ (−2, −2)

$|x+4| = 6$

$x+4=6$ (−4) OR $x+4=-6$ (−4)

$x=2$ or $x=-10$



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$$|8-x|=1$$

$$8-x=1 \quad \text{OR} \quad 8-x=-1$$

$$-8 \qquad -8 \qquad -8 \qquad -8$$

$$-x=-7 \quad \text{OR} \quad -x=-9$$

$$\frac{-x}{-1}=\frac{-7}{-1} \quad \text{OR} \quad \frac{-x}{-1}=\frac{-9}{-1}$$

$$x=7 \quad \text{OR} \quad x=9$$

$$|-x+8|=1$$

$$-x+8=1 \quad \text{OR} \quad -x+8=-1$$