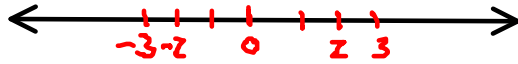


Absolute Value

Opposite Numbers - two numbers that are on opposite sides of zero on a number line and that are the same distance from zero



3

$$\text{opp} = -3$$

-2

$$\text{opp} = 2$$

0

$$\text{opp} = 0$$

Absolute Value - the distance from zero on a number line

$$|x|$$

$$|5| = 5$$

$$|-5| = 5$$



3

$$|3| = 3$$

-2

$$|-2| = 2$$

0

$$|0| = 0$$

1. Find the opposite of each number.

a) 6 $\boxed{-6}$

b) $-1\frac{1}{2}$ $\boxed{1\frac{1}{2}}$

c) 0 $\boxed{0}$

d) -10 $\boxed{10}$

e) 13.7 $\boxed{-13.7}$

f) x $\boxed{-x}$

2. Find the absolute value of each number.

a) 6 = $\boxed{6}$

b) $-1\frac{1}{2}$ = $\boxed{1\frac{1}{2}}$

c) 0 = $\boxed{0}$

d) -10 = $\boxed{10}$

e) $|x| = |x| = \boxed{x}$

f) $-x = |x| = \boxed{x}$

3. Simplify each expression.

$$\begin{aligned} \text{a) } -|-10| &= -1|-10| \\ &= -1(10) \\ &= \boxed{-10} \end{aligned}$$

$$\text{b) } |-4+3| = |-1| = \boxed{1}$$

$$\begin{aligned} \text{c) } -|-18+20| &= -1|-18+20| \\ &= -1|2| \\ &= -1(2) \\ &= \boxed{-2} \end{aligned}$$

$$\begin{aligned} \text{d) } |-(7)| &= |-1(-7)| \\ &= |7| \\ &= \boxed{7} \end{aligned}$$

$$\begin{aligned} \text{e) } -3|-6| &= -3 \cdot |-6| \\ &= -3(6) \\ &= \boxed{-18} \end{aligned}$$

$$\begin{aligned} \text{f) } |-8|+|8| &= 8+8 \\ &= \boxed{16} \end{aligned}$$

$$\begin{aligned} \text{g) } |-10|-|-5| &= 10-5 \\ &= \boxed{5} \end{aligned}$$

$$\begin{aligned} \text{h) } -(|-9|-|7|) &= -(9-7) \\ &= -2 \\ &= -1(2) \\ &= \boxed{-2} \end{aligned}$$

i) $|10| - |-6| - |-14|$

$$10 - 6 - 14$$

$$4 - 14 = +4 + \bar{14} = 4 + -14 = \boxed{-10}$$

4. Evaluate each expression for $x = -6$.

a) $-x = -1 \cdot x = -1(-6)$
 $= \boxed{6}$

b) $3 - |x| = 3 - |-6|$
 $= 3 - 6$
 $= +3 + \bar{6}$
 $= 3 + -6$
 $= \boxed{-3}$

c) $|3 - x| = |3 + (+6)|$
 $= |3 + 6|$
 $= |9| = \boxed{9}$

d) $|x + 2| = |-6 + 2|$
 $= |-4|$
 $= \boxed{4}$

$$e) x - |x| = -6 - |-1(-6)|$$

↑

$$= -6 - |6|$$

$$= -6 + \ominus 6$$

$$= -6 + -6$$

$$= \boxed{-12}$$