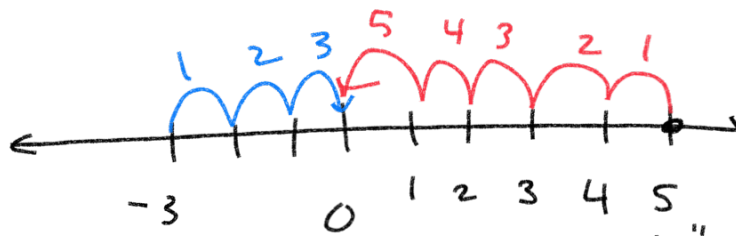


TH-A1 Algebra 1 Week 5 10/6

Absolute value - Distance from a number to zero on the number line

absolute value

$$|5| = 5$$



$$|-3| = 3$$

$$|-2| = 2$$

"opposite"

$$\ominus |4| = -4$$

$$-|-5| = -5$$

↳ 5

$$|(8-4)| = |4| = \boxed{4}$$



$$|5-7| = |-2| = \boxed{2}$$

1.)  $6 + (-4) = \boxed{2}$       2.)  $\downarrow$   $-6 + 4 = \boxed{-2}$       3.)  $6 + 4 = \boxed{10}$   
 $6-4=2$                        $6-4=2$

4.)  $\downarrow$   $-6 + \downarrow(-4) = \boxed{-10}$       5.)  $3 + 7 = \boxed{10}$       6.)  $-3 + 7 = \boxed{4}$   
 $6+4=10$                        $7-3=4$

7.)  $\downarrow$   $-3 + \downarrow(-7) = \boxed{-10}$       8.)  $3 + (-7) = \boxed{-4}$   
 $3+7=10$                        $7-3=4$

$$1.) -9 - 6 = \boxed{-15}$$

$$-9 + (-6)$$

$$2.) 9 - 6 = \boxed{3}$$

$$3.) 9 - (-6)$$

$$9 + (+6) = \boxed{15}$$

$$4.) -9 - (-6) = \boxed{-3}$$

$$\begin{array}{l} \text{Σ} -9 + 6 \\ 9 - 6 = 3 \end{array}$$

$$5.) 7 - 11 = \boxed{-4}$$

$$\begin{array}{l} 7 + (\downarrow -11) \\ 11 - 7 = 4 \end{array}$$

$$6.) -7 - 11 = \boxed{-18}$$

$$\begin{array}{l} \downarrow \\ -7 + (-11) \\ 7 + 11 = 18 \end{array}$$

$$7.) -7 - (-11) = \boxed{4}$$

$$\begin{array}{l} -7 + 11 \\ 11 - 7 = 4 \end{array}$$

$$8.) 7 - (-11) = \boxed{18}$$

$$\begin{array}{l} + - \quad \downarrow \quad - (-) \\ 7 + 11 \quad + (-) \quad + + \end{array}$$

$$1.) -7 * 6$$

$$\boxed{-42}$$

$$2.) 7 * (-6)$$

$$\boxed{-42}$$

$$3.) 7 * 6$$

$$\boxed{42}$$

$$4.) -7 * (-6)$$

$$\boxed{42}$$

$$5.) -3 * (-12)$$

$$\boxed{36}$$

$$6.) 3 * (-12)$$

$$\boxed{-36}$$

$$7.) 3 * 12$$

$$\boxed{36}$$

$$8.) -3 * 12$$

$$\boxed{-36}$$

$$\begin{array}{ccccccc} \textcircled{1} & \textcircled{2} & \textcircled{3} & & \textcircled{4} & & \\ (-2) & (-2) & (-2) & (2) & (2) & (-2) & = 64 \\ - & + & - & - & - & + & \\ \text{even \# of negatives} & \rightarrow & \oplus & & & & \end{array}$$

$$\begin{array}{ccccccc} \textcircled{1} & \textcircled{2} & & & \textcircled{3} & & \\ (-2) & (-2) & (2) & (2) & (-2) & (2) & \\ & & & & & & \\ & & & & & & -64 \end{array}$$

# Distributive Property

$$\boxed{2}(5x+4) = (5x+4) + (5x+4)$$

$$10x + 8$$

$$2(5x+4)$$

$$2(5x) + 2(4)$$

$$\boxed{10x + 8}$$

$$4(7x-3) = \boxed{28x - 12}$$

opposite ↓

$$(3x+4) \cdot 7 = \boxed{21x + 28}$$

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

$$\frac{1}{4}(12x-8)$$

$$\frac{1}{4}(12x) - \frac{1}{4}(8) = \frac{12x}{4} - \frac{8}{4} = \boxed{3x - 2}$$

$$8 - 2(5x+3) - 4x$$

$$\textcircled{8} \textcircled{-10x} \textcircled{-6} \textcircled{-4x}$$

$$\textcircled{8-6}$$

$$2$$

$$-10x - 4x$$

$$-14x$$

"combine like terms"

$$-10x - 4x$$

$$-10x + (-4x)$$

$$\boxed{-14x + 2}$$

$$1.) -5(8-b)$$

$$\boxed{-40 + 5b}$$

$$2.) -(3k-12) \text{ "Needham Slap"}$$

$$\boxed{-3k + 12}$$

$$3.) 5(t-3) - 2t$$

$$\boxed{5t - 15 - 2t}$$

$$5t - 2t = 3t \quad \boxed{3t - 15}$$

$$4.) 4(2x+7)$$

$$\boxed{8x + 28}$$

$$5.) 5(3x+12)$$

$$\boxed{15x + 60}$$

$$6.) -6(-3)(2k+4)$$

$$\boxed{-6 - 6k - 12}$$

$$-6 - 12 = -18 \quad \boxed{-6k - 18}$$

$$27 + 28 + 73 = \underbrace{27 + 73} + 28$$

$$100 + 28 = 128$$

with addition  
and multiplication

ORDER DOES NOT MATTER

Commutative Property

$$3 + 4 = 4 + 3$$

$$5 * 8 = 8 * 5$$

$$a + b = b + a$$

$$a * b = b * a$$

$$(77 * 4) * 25 = 77 * (4 * 25)$$

Addition and multiplication  $77 * 100 = 7700$

you can change the order of parenthesis

## Associative Property

$$(8 + 4) + 5 = 8 + (4 + 5)$$

Identity Property → what it is

$$5 + 0 = 5$$

$$a + 0 = a$$

$$6 * 1 = 6$$

$$a * 1 = a$$

Inverse Property → how it dies

$$8 + (-8) = 0$$

add opposites  
change

$$a + (-a) = 0 \quad \text{sign}$$

$$\frac{8}{1} * \left(\frac{1}{8}\right) = \frac{8}{8} = 1$$

inverse or reciprocal

multiply inverses = 1

$$\frac{3}{4} * \frac{4}{3} = \frac{12}{12} = 1$$

$$a * \frac{1}{a} = 1$$

