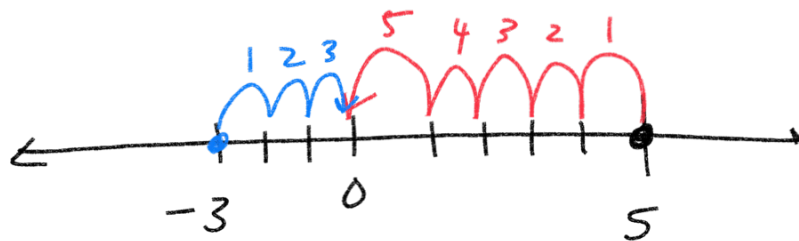


# W-A1 Algebra 1 Week 5 10/4

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

$$|5| = 5$$



$$|-3| = 3$$

$$|-2| = 2$$

$$-|4| = -4$$

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



$$|8-4| = |(8-4)| = |4| = 4$$

$$|5-7| = |(5-7)| = |-2| = 2$$

$$1.) \downarrow 6 + (-4) = 2$$

$$6 - 4 = 2$$

$$2.) \downarrow -6 + \downarrow 4 = -2$$

$$6 - 4 = 2$$

$$3.) 6 + 4 = 10$$

$$4.) \downarrow -6 + (-4) = -10$$

$$5.) 3 + 7 = 10$$

$$6.) \downarrow -3 + \downarrow 7 = 4$$

$$7 - 3 = 4$$

$$7.) \downarrow -3 + (-7) = -10$$

$$8.) \downarrow 3 + (-7) = -4$$

$$7 - 3 = 4$$

10  
 $\downarrow$   
 $\downarrow$   
 $\downarrow$

$$1.) -9 - 6 = \textcircled{-15}$$
$$\downarrow \quad \downarrow \quad \downarrow$$
$$-9 + (-6) = -15$$

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

$$3.) 9 - (-6) = \textcircled{15}$$
$$\downarrow$$
$$9 + 6 = 15$$

$$4.) -9 - (-6) = \textcircled{-3}$$
$$\downarrow \quad \downarrow$$
$$-9 + 6 = -3$$

$$5.) 7 - 11 = \textcircled{-4}$$
$$7 + (-11)$$
$$11 - 7 = 4$$

$$6.) -7 - 11 = \textcircled{-18}$$
$$\downarrow$$
$$-7 + (-11) = -18$$

$$7.) -7 - (-11) = \textcircled{4}$$
$$\downarrow \quad \downarrow$$
$$-7 + 11 = 4$$
$$11 - 7 = 4$$

$$8.) 7 - (-11) = \textcircled{18}$$
$$\downarrow$$
$$7 + 11 = 18$$

$$\begin{array}{ccc} - & + & - \\ \downarrow & \downarrow & \downarrow \\ - & - & + \end{array}$$

$$1.) -7 * 6 = \textcircled{-42} \quad 2.) 7 * (-6) = \textcircled{-42} \quad 3.) 7 * 6 = \textcircled{42}$$

$$4.) -7 * (-6) = \textcircled{42} \quad 5.) -3 * (-12) = \textcircled{36} \quad 6.) 3 * (-12) = \textcircled{-36}$$

$$7.) 3 * 12 = \textcircled{36} \quad 8.) -3 * 12 = \textcircled{-36}$$

$$\overset{1}{(-2)} \overset{2}{(-2)} \overset{3}{(-2)} \overset{4}{(2)} (2) (2) = +64$$

Even # of negatives  $\rightarrow \oplus$

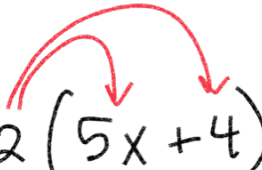
$$\downarrow$$
$$\overset{1}{(-2)} \overset{2}{(-2)} \overset{3}{(2)} (2) (-2) (2) = -64$$

Odd # of negatives  $\rightarrow \ominus$

# Distributive Property

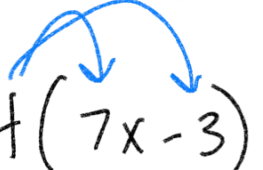
$$2(5) = 5 + 5 = 10$$

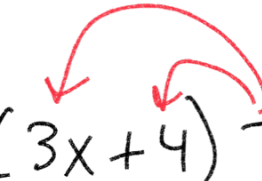
$$\begin{aligned} 2(5x+4) &= (5x+4) + (5x+4) \\ &= 5x+4 + 5x+4 \\ &= \boxed{10x+8} \end{aligned}$$

$$2(5x+4)$$


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

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

$$4(7x-3)$$

$$\boxed{28x-12}$$

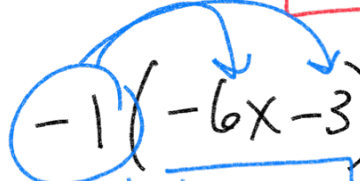
$$(3x+4)7$$


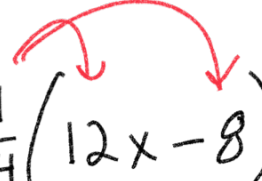
$$7(3x) + 7(4)$$

$$\boxed{21x+28}$$

opposite  
↓

$$-(-6x-3)$$

$$= -1(-6x-3)$$

$$\boxed{6x+3}$$

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


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

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

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

$$8 - 10x - 6 - 4x$$

"Combine like terms"

$$\underbrace{-10x - 4x}$$

↓

$$-14x$$

$$\underbrace{8 - 6}$$

↓

$$2$$

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

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

$(8 + (-b))$   
 $-5 * (-b)$

$$-40 + 5b$$

$$2.) -(3k - 12)$$
$$\boxed{-3k + 12}$$

$$3.) 5(t - 3) - 2t$$
$$5t - 15 - 2t$$

$$5t - 2t$$

$$\boxed{3t - 15}$$

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

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

$$4.) 4(2x + 7)$$
$$\boxed{8x + 28}$$

$$6.) -6 - 3(2k + 4)$$
$$-6 - 6k - 12$$

$$-6 + (-12)$$

$$\boxed{-18 - 6k}$$

$$\boxed{-6k - 18}$$

$$27 + 28 + 73 = 28 + \underbrace{27 + 73}_{28 + 100 = 128}$$

Commutative Property      order does not matter  
with add/mult

$$3 + 4 = 4 + 3$$

$$5 * 8 = 8 * 5$$

$$a + b = b + a$$

$$a * b = b * a$$

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

$$77 * 100 = \boxed{7700}$$

Associative Property

Add  $\frac{1}{2}$  Mult you can rearrange parentheses

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

Identity Property → what it is

$$5 + 0 = 5$$

$$6 * 1 = 6$$

$$a + 0 = a$$

$$a * 1 = a$$

# Inverse Property → how it dies

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

Add opposites = 0

$$a + (-a) = 0$$

$$8 * \frac{1}{8} = 1$$

Multiplicatives

↳ 1

inverse flip!

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

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