W-PA Pre-Algebra Week 4 9/27

$4\boxed{x} + 6\boxed{y} - 2\boxed{z}$ $\boxed{x}=\boxed{3}$ $\boxed{y}=\boxed{4}$ $\boxed{z}=\boxed{5}$

$4(3) + 6(4) - 2(5)$ $4*3 + 6*4 - 2*5$

$\downarrow \quad \downarrow \quad \downarrow$

$\underbrace{12 + 24}_{36} - 10$

$36 - 10 = \boxed{26}$

1.) $7p + q(3+r)$ $p=3$ $q=2$ $r=4$

$\downarrow \quad \downarrow$ *

$7(3) + 2(3+4)$

$\downarrow$

$7(3) + 2(7) = 21 + 14 = \boxed{35}$

2.) $\frac{36}{j} - 4(k+m)$ $j=2$ $k=1$ $m=3$

$\frac{36}{2} - 4(1+3)$

$\downarrow$

$\frac{36}{2} - 4(4)$

$18 - 4(4) = 18 - 16 = \boxed{2}$

Absolute value — the distance between a number and $\emptyset$ on the number line.

$|-3| = 3$ $\quad |4| = 4$ $\quad -|-7| = -7$ $\quad -|8| = -8$

Compare using inequalities

$>$	$<$	$=$
Greater than	Less than	equals

1.) $|-3| > |-1|$

$3 > 1$

2.) $|-1| = |1|$

$1 = 1$

3.) $|-3| > |2|$

$3 > 2$

4.) $-3 > -5$

5.) $5 > |-4|$

$5 > 4$

6.) $-6 < -4$

7.) $|-2| < 3$

$2 < 3$

8.) $4 > |-2|$

$4 > 2$

Adding Integers

NO CALCULATOR!

$\oplus \qquad \ominus$

$5 + (-8) = \boxed{-3}$

-3

If signs are different, we take their difference

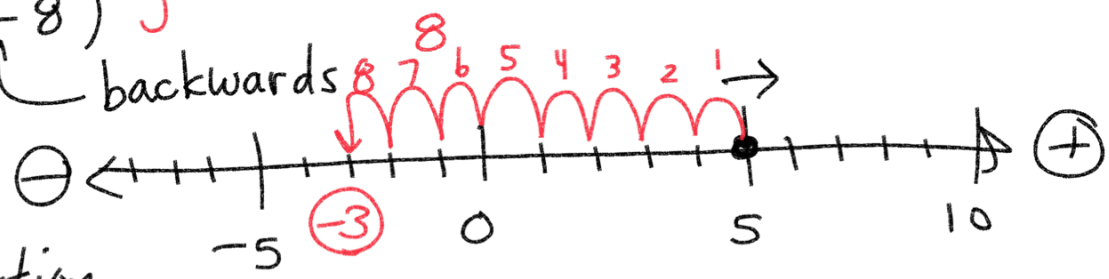
$5 + (-8)$

positive — negative — larger

$8 - 5 \longrightarrow -3$

$5 + (-8)$ go backwards

start — direction we face — backwards



$5 + (-8) = 5 - 8$

$-3 + (-4) = \boxed{-7}$

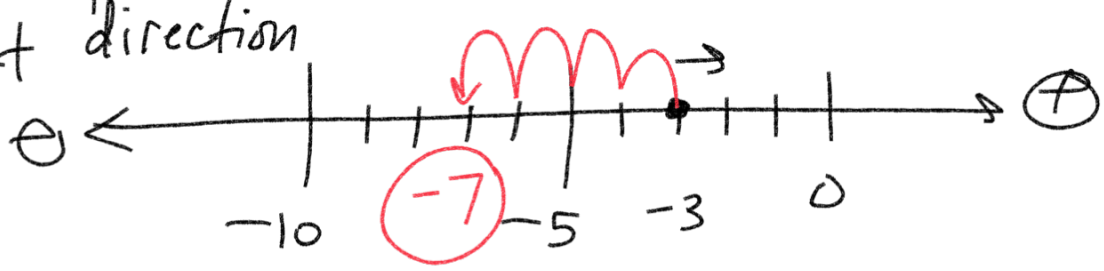
Same signs, we take their sum (add)

$3 + 4 \longrightarrow 7$

Because both are negative, $\boxed{-7}$

$-3 + (-4)$ backwards 4

start — direction



1.) $-4 + 10 = \boxed{6}$

Different → Difference

$10 - 4 = \boxed{6}$

2.) $8 + (-4) = \boxed{4}$

Different → difference

$8 - 4 = \boxed{4}$

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

Different → difference

$10 - 4 = -6$

4.) $-8 + (-4) = -12$

Same → Sum

$8 + 4 = -12$

5.) $4 + 10 = 14$

6.) $-8 + 4 = -4$

Difference → difference

$8 - 4 = -4$

7.) $-4 + (-10) = -14$

Same → sum

$4 + 10 = -14$

8.) $8 + 4 = \boxed{12}$

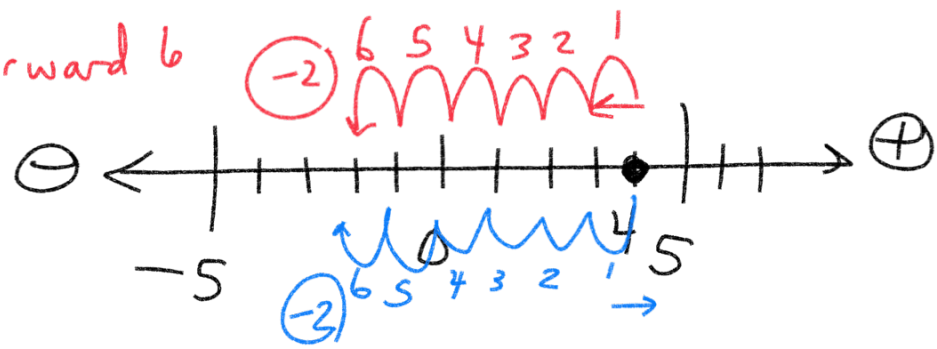
Subtract Integers

$4 - 6 = 4 + (-6) = \boxed{-2}$

$4 - 6$ forward 6

start direction

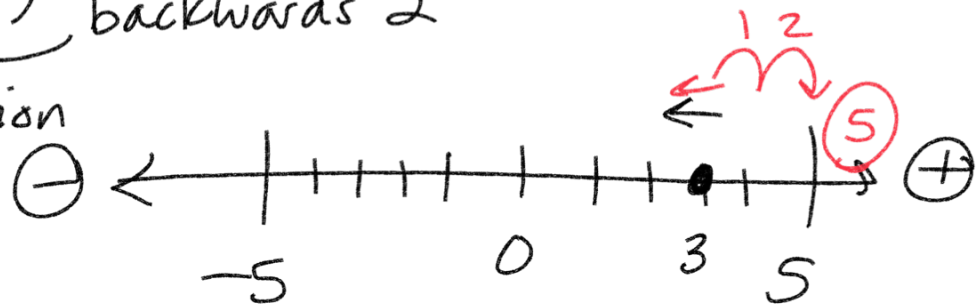
$4 + (-6)$ backward 6



$3 - (-2)$ (opposite) backwards 2

start

direction



$3 - (-2) = \boxed{5}$

$3 + 2 = 5$

$3 + (+2)$

$3 + 2$

if signs are the same → +

$3 - (+2)$

$3 - 2$

$3 + (-2)$

$3 - 2$

if signs are different ↳ −

1.) $-5 - 3 =$

$-5 + (-3) = -8$

2.) $5 - 3 = 2$

3.) $5 - (-3)$

$5 + 3 = 8$

4.) $-5 - (-3) =$

$-5 + 3 = -2$

1.) $9 - (-6) =$

$9 + 6 = \boxed{15}$

2.) $-9 - (-6) = -3$

$-9 + 6$

Different $9 - 6 = -3$

3.) $9 - 6 = 3$

4.) $-9 - 6 = \boxed{-15}$

$-9 + (-6)$

1.) $8 - 11 = \boxed{-3}$

$8 + (-11)$

2.) $-8 - (-11) =$

$-8 + 11 = 3$

3.) $-8 - 11 = -19$

$-8 + (-11)$

same → sum

$8 + 11 = -19$

4.) $8 - (-11) = 19$

$8 + 11 = 19$