

Adding Integers

Coach Odom

Algebra 8

Adding Integers

Integer- positive and negative whole numbers (and zero)

Zero Pair- a positive and negative that cancels each other out.

Adding Integers

We can use counters to add integers. For example:

$$2 + (-3) + (-4) =$$

This creates two
“zero pairs”

$2 + (-3) + (-4) = -5$



Adding Integers

- Work these on your whiteboard:

$$8+(-3)+(-1)$$

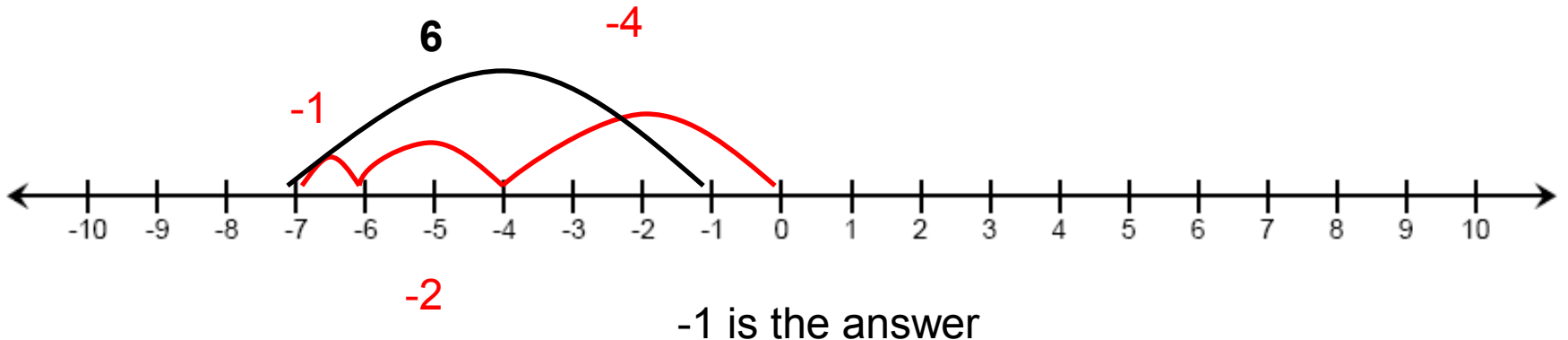
$$(-3)+(-5)+(-1)$$

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

Adding Integers

- You can also use a number line to add and subtract integers.

Ex: $(-4) + (-2) + (-1) + 6$



Adding Integers

- Add these using a number line

$$-4 + (-1) + 3 =$$

$$8 + (-3) + (-1) + 2 =$$

$$(-6) + (-1) + (-3) + 5 =$$

Adding Integers

Addition Rules:

There are two cases:

Case 1: Each number has the same sign.

Step 1: Add their absolute values.

Step 2: Take the common sign.

Ex: $-4 + (-2) =$

$|-4| + |-2|$ Step 1.

$4 + 2$ Step 1, continued

$= 6$

$= -6$ Step 2 (it's their common sign)

Adding Integers

It even works for positive numbers.

Ex: $6+2$

$|6| + |2|$ (Step 1)

$6+2$ (Step 1)

$=8$ (Step 2, the common sign is positive)

Adding Integers

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

$$|-5| + |-3| \text{ Step 1}$$

$$5 + 3 \text{ Step 1}$$

$$8 \text{ Step 1}$$

$$= -8 \text{ Step 2 (negative is the common sign)}$$

Adding Integers

Case Two: The two signs are different.

Step 1: Take the absolute value of each number.

Step 2: Subtract the smaller one from the larger one.

Step 3: Take the sign of the bigger number

Ex: $(-5)+2=$

$|-5|$ and $|2|$ (Step 1)

$5-2=3$ (Step 2)

-3 (Step 3)

Adding Integers

Ex: $4 + (-2) =$

$|4|$ and $|-2|$ **Step 1**

$4 - 2 =$ **Step 2**

$= 2$ **Step 3**

Ex: $-7 + 1 =$

$|-7|$ and $|1|$ **Step 1**

$7 - 1 = 6$ **Step 2**

$= -6$ **Step 3**

Adding Integers

On Whiteboards:

$$-3 + (-7) \quad -10$$

$$-1 + 3 \quad 2$$

$$8 + (-3) \quad 5$$

$$2 + (-3) \quad -1$$

Adding Integers

On Whiteboards, try the following:

$$-7+4+(-2)= \quad -5$$

$$-4+(-1)+(-5)= \quad -10$$

$$1+(-1)+6= \quad 6$$