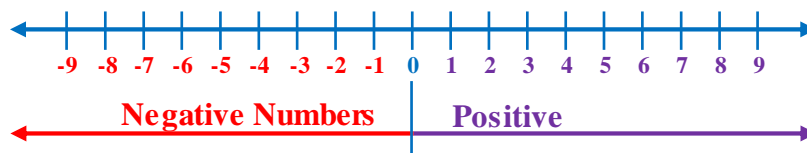


# Adding and Subtracting Real Numbers Guide Notes

We can use a number line to add any real numbers.

- Adding a positive number by moving to the right.
- Adding a negative number by moving to the left.



**Sample Problem 1:** Use a number line to find the sum.

a.  $-6 + 9$



b.  $4 + (-7)$



c.  $-3 + 8$



**RULES OF ADDITION:** without a number line

**To add two numbers with the same sign:**

1. Add their absolute values.
2. Attach the common sign.

**To add two numbers with opposite signs:**

1. Subtract the smaller absolute value from the larger absolute value.
2. Attach the sign of the number with the larger absolute value.

**Sample Problem 2:** Find the sum.

a.  $1.4 + (-2.6) + 3.1$

b.  $-\frac{1}{2} + 3 + \frac{1}{2}$

c.  $-11 + (-7)$

# Adding and Subtracting Real Numbers Guide Notes

**RULE OF SUBTRACTION:** without a number line

To subtract  $b$  from  $a$ , add the opposite of  $b$  to  $a$ :

$$a - b = a + (-b)$$

The result is the difference of  $a$  and  $b$ .

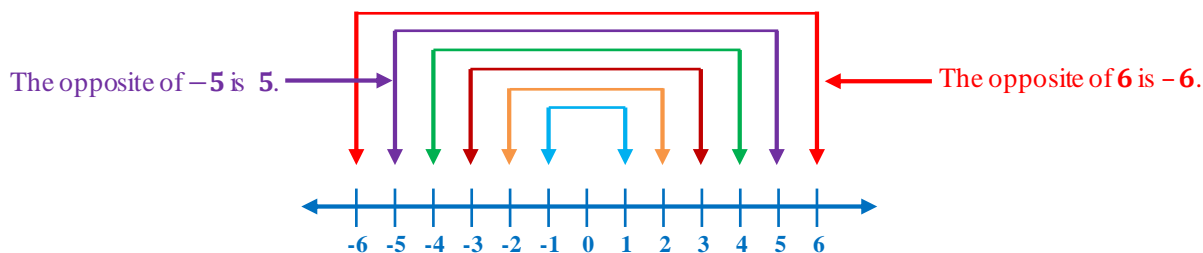
**Sample Problem 3:** Find the difference.

- a.  $-7 - 6$
- b.  $-\frac{5}{4} - \left(-\frac{1}{4}\right)$
- c.  $20 - 21$

**OPPOSITES** are pair of positive real numbers with its negative. Opposites are additive inverse of each other.

**ADDITIVE INVERSE** of a number  $a$  is the number that when add to  $a$  will yield zero.

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



**Sample Problem 4:** Evaluate each expression.

- a.  $3 - (-4) - 2 + 8$
- b.  $-9 - 2 + (-6)$
- c.  $-12 + (-11) + 17$

**Sample Problem 5:** The average height of a NBA player is 79 inches while the height of an average man is 69 inches. What is the difference between their heights?