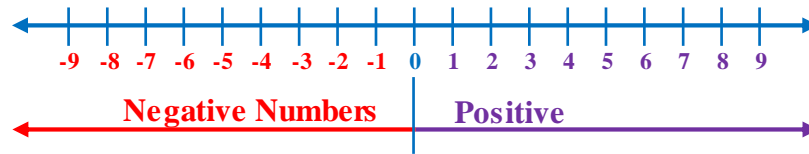


Adding and Subtracting Real Numbers Guide Notes

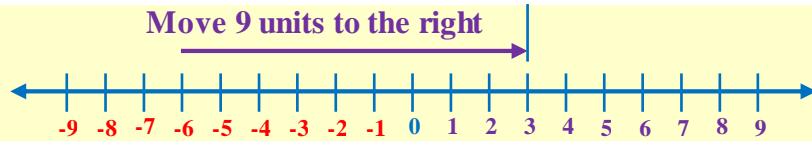
We can use a number line to add any real numbers.

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

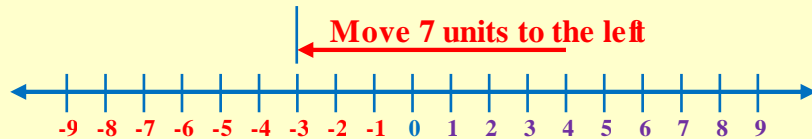


Sample Problem 1: Use a number line to find the sum.

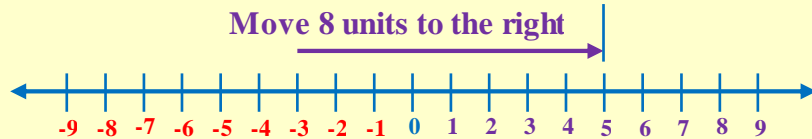
a. $-6 + 9 = 3$



b. $4 + (-7) = -3$



c. $-3 + 8 = 5$



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. $1.4 + (-2.6) + 3.1 = -1.2 + 3.1 = 1.9$

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

c. $-11 + (-7) = -18$

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 .

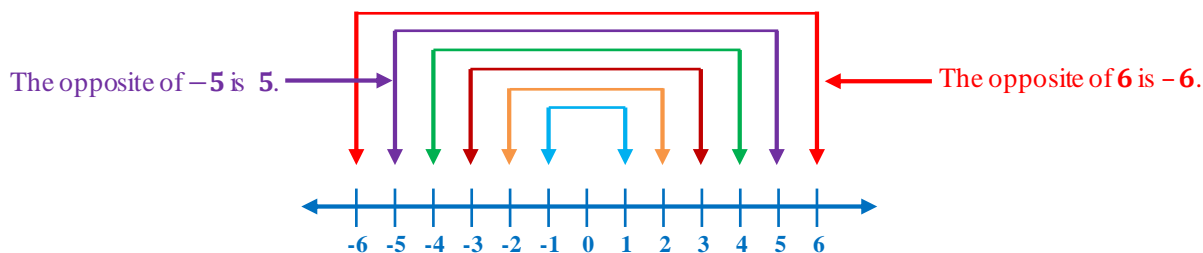
Sample Problem 3: Find the difference.

- a. $-7 - 6$ $= -13$
- b. $-\frac{5}{4} - \left(-\frac{1}{4}\right)$ $= -\frac{5}{4} + \frac{1}{4} = -\frac{4}{4}$ $= -1$
- c. $20 - 21$ $= -1$

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. $3 - (-4) - 2 + 8$ $= 3 + 4 + 6$ $= 7 + 6$ $= 13$
- b. $-9 - 2 + (-6)$ $= -11 - 6$ $= -17$
- c. $-12 + (-11) + 17$ $= -23 + 17$ $= -6$

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?

$$= 79 - 69$$

$$= 10 \text{ inches}$$