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 left.

**0**

**1**

**2**

**3**

**4**

**5**

**6**

**7**

**8**

**9**

**-1**

**-2**

**-3**

**-4**

**-5**

**-6**

**-7**

**-8**

**-9**

**Negative Numbers**

**Positive Numbers**

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

|  |  |  |
| --- | --- | --- |
|  |  | **0**  **1**  **2**  **3**  **4**  **5**  **6**  **7**  **8**  **9**  **-1**  **-2**  **-3**  **-4**  **-5**  **-6**  **-7**  **-8**  **-9**  **Move 8 units to the right** |
|  |  | **0**  **1**  **2**  **3**  **4**  **5**  **6**  **7**  **8**  **9**  **-1**  **-2**  **-3**  **-4**  **-5**  **-6**  **-7**  **-8**  **-9**  **Move 6 units to the left** |
|  |  | **0**  **1**  **2**  **3**  **4**  **5**  **6**  **7**  **8**  **9**  **-1**  **-2**  **-3**  **-4**  **-5**  **-6**  **-7**  **-8**  **-9**  **Move 4 units to the right** |

**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. |  |  |  |
| b. |  |  |  |
| c. |  |  |  |

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

**To subtract from, add the opposite of to :**

The result is the difference of and .

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

|  |  |  |  |
| --- | --- | --- | --- |
| a. |  |  |  |
| b. |  |  |  |
| c. |  |  |  |

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

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

**0**

**1**

**2**

**3**

**4**

**5**

**6**

**-1**

**-2**

**-3**

**-4**

**-5**

**-6**

The opposite of is .

The opposite of is .

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| a. |  |  |  |  |
| b. |  |  |  |  |
| c. |  |  |  |  |

**Sample Problem 5**: The average height of a NBA player is 75 inches while the height of an average man is 64 inches. What is the difference between their heights?