

**Properties of addition**

**Closure property:**

For any two whole numbers a and b, their sum  a + b is always a whole number.

E.g. 12 + 45 = 57

 12, 45 and 57 all are whole numbers.

**Commutative property:**

For any two whole numbers a and b, a +b = b + a We can add any two whole numbers in any order.

E.g  12 + 45 = 45 + 12

**Associative property**

For any three whole numbers a, b and c, (a + b) + c = a + (b + c). , This means the sum is regardless of how grouping is done.

E.g   31 + (24 + 38) = (31 + 24) + 38

**Additive identity property**:

For every whole number a, a + 0 = a. Therefore ‘0’ is called the Additive identity.

E.g. 19 + 0 = 19

***Question***: Find the sum by suitable arrangement.

1. 1962 + 453 + 1538 + 647 b. 837 + 208 + 363

Solution:

1. 1962 + 453 + 1538 + 647 = (1962 + 1538) + (453 + 647) = 3500 + 1100 = 4600
2. 837 + 208 + 363 = (837 + 363) + 208 = 1200 + 208 = 1408