6th – Whole Numbers I

Natural numbers: When we count a set of objects, we start counting from one and then go on to two, three, four, etc. this is the natural way of counting any set of objects. Hence 1, 2, 3, 4, 5…… are called counting numbers or natural numbers.

Whole numbers: The natural numbers along with zero form the collection of whole numbers.

Properties of whole numbers on addition:

Closure properties: whole number + whole number = whole number, by adding two whole numbers we get a whole number. Hence, whole numbers are closed under addition.

Commutative property: In this case of addition of whole numbers, the order in which we add does not alter the solution.

Associative property: a+ (b+c) = (a+b) +c. In other words, in addition of whole numbers, the sum does not change even if grouping is changed.

Additive identity: by adding zero to the whole number, does not change the number.

Properties of whole numbers on subtraction:

Closure properties: whole number - whole number = may or may not be a whole number. Hence, whole numbers are not closed under subtraction.

Commutative property: In this case of addition of whole numbers, the order in which we subtract matters. Hence, commutative property is not true for subtraction of whole numbers.

Associative property: a- (b-c) is not equal to (a-b) -c. In other words, in the associative property also does not hold true for subtraction of whole numbers.

Q1: Write the successor:

a) 2440699 b) 111200 c) 286668 d) 103478 e) 238899

Q2: Write the predecessor of:

a) 11100 b) 2088899 c) 7656543 d) 56997 e) 6655442

Q3: Which of the following statement are true(T) and which are false (F)?

a) Zero is the smallest natural number.
b) 600 is the predecessor of 599.
c) Zero is the smallest whole number.
d) 700 is the successor of 699.
e) All natural number are whole numbers.
f) All whole numbers are natural numbers.
g) The predecessor of a two digit number is never a single digit number.
h) 1 is the smallest whole number.
i) The natural number 1 has no predecessor.
j) The whole number 1 has no predecessor.
k) The whole number 13 lies between 11 and 12.
l) The whole number 0 has no predecessor.
m) The successor of a two digit number is always a two digit number.

Q4: How many whole numbers are there between 12 and 86.
Q5: How many whole numbers are there between 32 and 55.
Q6: How many whole numbers are there between 112 and 806.
Q7: How many whole numbers are there between 111 and 2344.

Q8: Seema got 99 marks in Math, 69 marks in English, and 91 in Science. Another student Rita got 92 marks in Math, 33 in English and 84 in Science. What are their total marks?

Q9: Find the successor and predecessor of each of the following whole numbers:

(i) 999 (ii) 21999 (iii) 4001 (iv) 500012 (v) 34997 (vi) 11111

Q10: Find the sum by suitable rearrangement:

a)534 + 100 + 466 b)365 + 700 + 635 c) 113 + 607 + 345 d) 55 + 349 + 121

Q11: Solve the following using associative property:

(a) 87 + 64 + 36 (b) 367 + 243 + 57 (c) 918 + 712 + 82 (d) 47+313+53

Q12: Mark whether true or false.

(a) 23 – 3 = 3 - 23 _____

(b) 16 + 4 = 4 + 16 _____

(c) 863 – 0 = 0 - 863 _____

(d) 341 + 21 = 21 + 341 _____

Q13: Fill in the boxes

(a) 8+7=___+8 (b) 472+36=36=_____(c) 89=87=_____+89 (d) 836+0=____ +836

Q14: Name the property:

(a) 19+63=63+19 (b) 20+0 = 20

(b) 16+95 = 95+16 (d) (20+3) + 16= 20+(3+16)

Q15: Show that:

(a) (63+49) +33 = 63 + (49 +33) (b) (1112+603) + 44 = 1112 = (603 + 44)

Properties of whole numbers on multiplication:

1. Closure property: if two whole numbers are multiplied, the product is always a whole numbers.
2. Commutative property: regardless of the order in which whole numbers are multiplied, we will get the same product.
3. Associative property: aX (bXc) = (aXb) Xc. The whole numbers possess the associative property of multiplication.
4. Multiplicative identity: when any whole number a is multiplied by 1, the product is the same a. 1×a=a×1=a. hence, 1 is called the multiplicative identity for whole numbers.

Q1: Sachin scores 52 runs in the first innings and 78 in the second innings. Ajay scores 78 runs in the first innings and 52 in the second innings. Who has the higher total score?

Q2: Ali cycles for 16 days, riding 20 km each day. Sam cycles for 20 days, riding 16 km each day. Who cycles a farther distance?

Q3: Shelly got 49 marks in Maths, 38 in English, and 51 in science. Dipti got 62 in math, 32 in English, and 54 in science. What are their total marks?