MATH 3

CHAPTER 5: SUBTRACTION

SUBTRACTION

➢ INTRODUCTION

Subtraction is the difference between two quantities and this is the inverse process of addition.

The name subtraction itself means "to take away". The symbol used for subtraction is (-) called minus. In the subtraction, the quantity from which another quantity is to be subtracted is called minuend and subtracted quantity is called the subtrahend. Resulting quantity of the subtraction is called their difference. In the S subtraction of X - Y = Z. X is minuend, Y is subtrahend and Z is difference between X and Y.

❖ SUBTRACTION WITHOUT BORROWING

The following steps are used for the subtraction of four digit numbers without borrowing:

Step 1: Write the numbers in such a way that the ones of a smaller number under the ones of bigger number and tens, hundreds, thousands of the smaller numbers under the tens, hundreds, thousands of bigger number respectively.

Step 2: Subtract the units, tens, hundreds, thousands of smaller number from the unit, tens, hundreds and thousands of bigger number starting from right or units.

Step 3: The resulting numbers is the difference of the numbers. For Example.

```
Th H  T  O
 7  9  8  6
-5  6  1  2
 2  3  7  4
= 2374
```

The following steps are used for the subtraction of five digit numbers (76987 - 52312) without borrowing:

Step 1: 7 – 2 = 5. Write 5 under ones column.

Step 2: 8 – 1 = 7. Write 7 under tens column.

Step 3: 9 – 3 = 6. Write 6 under hundreds column.

Step 4: 6 – 2 = 4. Write 4 under thousands column.

Step 5: 7 – 5 = 2. Write 2 under thousands column.

(1)

```
T.th Th  T   H   O
 7   6   9   8   7
-5   2   3   1   2
 2   4   6   7   5
```
=2374

Example:

There are 4095 people in a cricket stadium. The total number of females in the stadium is 1070. What is the total number of males in the stadium?

(a) 3025

(b) 3026

(c) 3027

(d) 3045

(e) None of these

Answer: (a)

Explanation:

Total number of males in the stadium = 4095 - 1070 = 3025.

❖ **SUBTRACTION OF FOUR AND FIVE DIGITS NUMBERS WITH BORROWING**

The following steps are used for the subtraction of four digit numbers (6748 - 5999) with borrowing:

Step 1: 9 > 8, hence, 9 cannot be subtracted from 8. Therefore, Borrowing 1 ten from 4 tens. Thus, 4 tens become 3 tens and 8 ones become 18 ones. (1 ten = 10 ones). Their subtraction = 18 - 9 = 9 ones. Write 9 under ones column.

Step 2: 9 > 3. Borrow 1 hundred from 7 hundreds, 7 hundreds become 6 hundreds and 3 tens become 13 tens. Hence, their subtraction = 13 - 9 = 4 tens.

Write 4 under tens column.

Step 3: 9 > 6. Borrow 1 thousand from 6 thousands, 6 thousands become 5 thousands and 6 hundreds become 16 hundreds. Hence, their subtraction = 16 - 9 = 7. Write 7 under hundreds column.

Step 4: 5 – 5 = 0. Write 0 under thousands column.

```
Th   H    T    O
 5   16   13   18
 6    7    4    8
-5    9    9    9
 0    7    4    9
```

The following steps are used for the subtraction of five digit numbers (97564 - 78268) with borrowing:

Step 1: 8 > 4, 8 cannot be subtracted from 4. Borrowing 1 ten from 6 tens, 6 tens become 5 tens and 4 ones become 14 ones. Hence, their subtraction = 14 - 8 = 6 ones. Write 6 under ones column.

Step 2: 6 > 5. Borrow 1 hundred from 5 hundreds, 5 hundreds become 4 hundreds and 5 tens become 15 tens. Hence, their subtraction = 15 - 6 = 9 tens.

Write 9 under tens column.

Step 3: 2 < 4. Therefore, 4 – 2 = 2. Write 2 under hundreds column.

Step 4: 8 > 7. Borrow 1 ten thousand from 9 ten thousands, 9 ten thousands become 8 ten thousands and 7 thousands become 17 thousands. Hence, their subtraction = 17 - 8 = 9. Write 9 under thousands column.

Step 5: 8 – 7 = 1 ten thousand. Write 1 under ten thousands column.

```
T.Th  Th   H   T   O
  ⑧        ④  ⑤
  9    7   5   6   4
- 7    8   2   6   8
  1    9   2   9   6
```

Example:

The bank statement of the saving bank is balance of Rs 56045. Find the current balance after withdrawing Rs 29896.

(a) Rs 26252

(b) Rs 26149

(c) Rs 26272

(d) Rs 26328

(e) None of these

Answers: (b)

Explanation:

```
T.Th  Th   H    T   O
  4    5   9    3
  5    6   0    4   5
- 2    9   8    9   6
  2    6   1    4   9   = Rs. 26149
```

➢ SUBTRACTION OF DECIMAL NUMBERS

The following steps are used for the subtraction of decimal numbers (324.567 -187.793);

Step 1: Arrange the numbers in column, whole parts of the subtrahend under the whole part of minuend and decimal part of the subtrahend under decimal part of minuend.

Step 2: Subtract the numbers starting from right or ones.

Step 3: Take borrow from the minuend if required.

Step 4: The resulting number is the difference of the decimal numbers.

Wholepart H T O	Decimal Point	Decimal Part Tenths Hundredths Thousandths
2 1 3		4
3 2 4	.	5 6 7
1 8 7	.	7 9 3
1 3 6	.	7 7 4

Example:

Area of a rectangular field is 56.80 sq. metres and a square shaped flower park is exactly at the centre of the rectangular field whose area is 36.45 sq. metres.

The area of rectangular field excluding the area of squared flower park is:

(a) 16.25 square metre

(b) 26.149 square metre

(c) 20.35 square metre

(d) All of these

(e) None of these

Answer: (c)

Explanation:

Whole pare Decimal point Decimal part

T	O	Tenths	Hundredths
		7	
5	6 .	8	0
-3	6 .	4	5
2	0 .	3	5

Example:

There are 45 number of chairs and 56 number of tables in a furniture shop.

(4)

Punit wants to buy 4 more pieces of chairs and 5 more Pieces of tables. The total number of chairs and tables bought by Punit is:

(a) 49 chairs and 61 tables

(b) 26 chairs 49 tables

(c) 49 chairs and 60 tables

(d) All of these

(e) None of these

Answer: (a)

Explanations Total number of chairs is bought by Punit = 45 + 4 = 49 and total number of tables is bought by Punit = 56 + 5 = 61.

Questions:

1. The number of children in a school is 4500. School management provides dresses to all of them except 234 girls. The total number of dresses provided by the management is:

(a) 4266

(b) 4431

(c) 4341

(d) 4231

(e) None of these

Answer: (a)

Explanations: Total number of dresses provided by school management =

Total number of students - Total number of girls students = 4500 - 234 = 4266.

2. Subtract the following: 7x - x.

(a) 5x

(b) 6x

(c) 3x

(d) 7x

(e) None of these

Answer: (b)

Explanation: 7x – x = 6x.

(5)
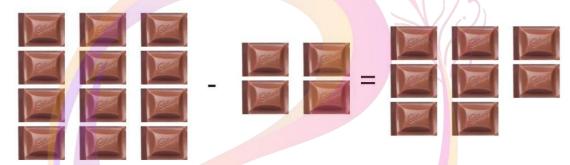
➢ MORE IMPORTANT POINTS

❖ REAL LIFE EXAMPLES

- Elevator is a real life example of addition and subtraction. The ground floor is considered to be 0.
- Subtraction helps in calculating the amount left in bank account after debits.

❖ AMAZING FACTS

- Subtract is formed by two words "sub" and "tract". "Sub" means "below" and "tract" means "to pull away".
- When we subtract zero from a particular number (or digit of a number) we get the number (or the digit) itself. For example: 413 – 100 = 313

❖ QUICK CONCEPT REVIEW

Subtraction is taking away a certain number of objects from a bigger set of objects.

❖ MORE ABOUT SUBRTACTION

- Subtraction is one of the basic four operations.
- It is denoted by the symbol "-". For example: 12 subtracted from 45 can be written as 45-12.
- The number of items left after subtraction is called "difference".
- A 10 x 10 number grid is a helpful tool to subtract 2-digit numbers.
- Some words that denote addition are "minus", "take away" and "left",
- Addition can be done in different ways
- Counting in tens: 47- 34 = 47 - 10 -10-10-4
- Place value: 56 - 13

    6 – 3 = 3

    50 - 10 = 40

    40 + 3 = 43