L.B.N.P.S. Jaunpur

CLASS- VI

Subject- Maths

Chapter - Factors and Multiples

Factor ⇒ A factor of a number is an exact divisor of that number.

Multiple ⇒ A number is said to be a multiple of any of its factors.

Example- We know that

$15 = 1 \times 15$ and $15 = 3 \times 5$

This shows that each of the numbers 1, 3, 5, 15 exactly divides 15.

Therefore 1, 3, 5, 15 are all factors of 15.

* 1 is a factor of every number.

and every number is a factor of itself.

Various types of numbers

(i) Even numbers. All multiples of 2 are called even numbers.

ex- 2, 4, 6, 8 .... etc are all even numbers.

(ii) Odd Numbers Number which are not multiples of 2 are called odd numbers.

ex- 1, 3, 5, 7, ... etc are all odd numbers

Prime numbers Each of the numbers which have exactly two factors, namely, 1 and itself is called a prime number.

Ex - The numbers 2, 3, 5, 7, 11, 13 etc .... are all prime numbers.

Q1- Write down all the factors of

(i) 20 (ii) 36 (iii) 60 (iv) 75

Q2- Write the first five multiple of each of the following numbers.

(i) 17 (ii) 23 (iii) 65 (iv) 70

Q3- Which of the following numbers are even and which are odd?

(i) 32 (ii) 37 (iii) 50 (iv) 58

(v) 69 (vi) 144 (vii) 321 (viii) 253

Q4- Write all the prime numbers between

(i) 10 and 40 (ii) 80 and 100

(iii) 40 and 80 (iv) 30 and 40

Prime Factor - A factor of a given number is called a prime factor if this factor is a prime number.

ex = 2 and 3 are prime factor of 12

Prime Factorization → To express a given number as a product of prime factors is called prime factorization or complete factorization of the given number.

Ex - Let us factorize 36 in three different ways as given below

$36 = 2 \times 18$

2×9

3×3

Thus $36 = 2 \times 2 \times 3 \times 3$

$36 = 3 \times 12$

2×6

2×3

$36 = 3 \times 2 \times 2 \times 3$

Q⇒ Give the prime factorization of each of the following numbers:

1. 12 2. 18 3. 48

4. 56 5. 136 6. 252

7. 420 8. 637 9. 1224

10. 4641 11. 4335 12. 2907

HIGHEST COMMON FACTOR (HCF)

The greatest number which is a common factor of two or more given numbers, is called their highest common factor.

Ex- Find the HCF of 24 and 32.

24 - 2×2×2×3

32 - 2×2×2×2×2

HCF - 2×2×2

= 8

3	24
3	12
2	6
3	3
	1

2	32
2	16
2	8
2	4
2	2
	1

Teacher's Sign.

Q- Find the HCF of the numbers in each of the following, using the prime factorization method

(i) 84, 98

(ii) 170, 238

(iii) 504, 980

(iv) 72, 108, 180

(v) 84, 120, 138

(vi) 272, 425

(vii) 106, 159, 371