MULTIPLES

Multiples are what we get **after** multiplying <u>a number</u> by <u>another number.</u>

E.g. $\boxed{7} \times 6 = \textcircled{42}$

Here 42 is the multiple of the number 7.

Let us solve: (Last few are for students to answer)

I   Write the first five multiples of:

a.   9 – 9, 18, 27, 36, 45
b.   11 – 11, 22, 33, 44, 55
c.   20 – 20, 40, 60, 80, 100
d.   32 –
e.   100 –

II   Write the next four multiples of:

a.   10 – 20, 30, 40, 50
b.   15 – 30, 45, 60, 75
c.   42 –
d.   50 –
e.   75 –

III   Fill in the missing multiples:

a.   6, <u>12</u>, <u>18</u>, 24, <u>30</u>, <u>36</u>, 42, 48, <u>54</u>, <u>60</u>
b.   4, _____, 12, _____, 20, _____, _____, 32, _____, 40
c.   12, 24, _____, _____, 60, _____, _____, _____, _____, 12

FACTORS

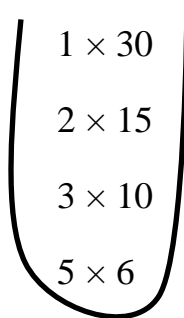Factors are what we can multiply to get the number.

E.g. $\textcircled{6} \times \textcircled{5} = 30$

Here 6 and 5 are the factors of 30.

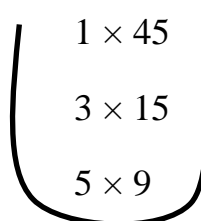Let us solve: (Last few are for students to answer)

I   Find the factors of:

a.   30

$$\begin{pmatrix} 1 \times 30 \\ 2 \times 15 \\ 3 \times 10 \\ 5 \times 6 \end{pmatrix}$$

Ans The factors of 30 are 1, 2, 3, 5, 6, 10, 15 and 30.

b.   45

$$\begin{pmatrix} 1 \times 45 \\ 3 \times 15 \\ 5 \times 9 \end{pmatrix}$$

Ans   The factors of 45 are 1, 3, 5, 9, 15 and 45.

c.   54

Ans   The factors of 54 are _____.

d.   100

Ans

PRIME FACTORIZATION

Finding the **unique set** of **Prime numbers** that **multiply** up to a given **Composite number**.
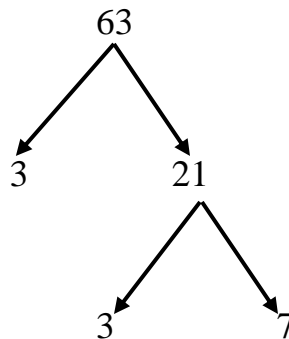
E.g. $$12 = \boxed{2 \times 2 \times 3}$$

Here the set of prime numbers **2 × 2 × 3** when multiplied will give us the composite number **12**.

There are two methods to find prime factors of a given number.

I   FACTOR TREE METHOD

E.g.   63

```
            63
           /  \
          3    21
              /  \
             3    7
```

Ans   The prime factors of $63 = 3 \times 3 \times 7$

II   DIVISION METHOD

E.g.   72

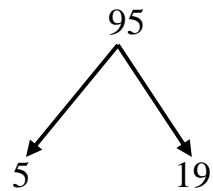| 2	72
2	36
2	18
3	9
3	3
	1

Ans   The prime factors of $72 = 2 \times 2 \times 2 \times 3 \times 3$
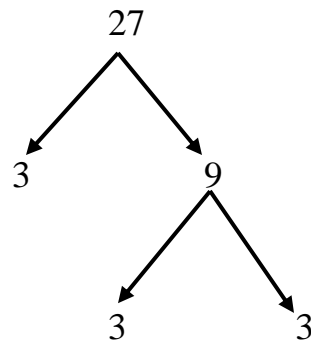
Let us solve: (Last few are for students to answer)

I   Fine the prime factors of the given number using factor tree method:

a.   95

```
        95
       /  \
      5    19
```

Ans   The prime factors of $95 = 5 \times 19$

b.   27

```
        27
       /  \
      3    9
          /  \
         3    3
```

Ans   The prime factors of $27 = 3 \times 3 \times 3$

c.   80

d.   96

II Find the prime factors using division method:

a. 28

2	28
19	19
	1

Ans The prime factors of $28 = 2 \times 19$

b. 75

5	75
5	15
3	3
	1

Ans The prime factors of $75 = 5 \times 5 \times 3$

c. 81

d. 88