

# Number System

1. Find the prime factorization of 1240 using three different methods.

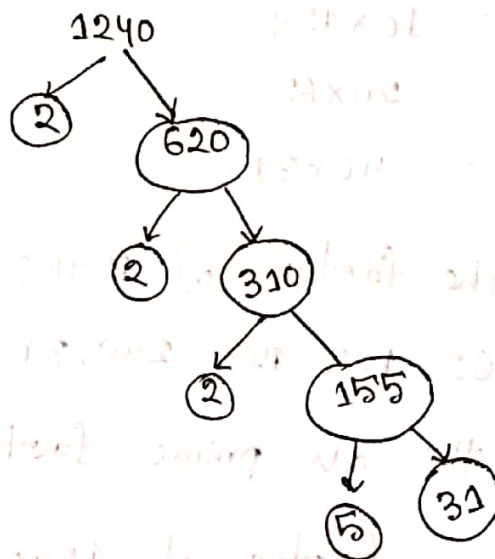
Solution:

Division method

$$\begin{array}{r} 2 \overline{) 1240} \\ \underline{2 \quad 620} \\ 2 \overline{) 310} \\ \underline{2 \quad 155} \\ 5 \overline{) 155} \\ \underline{5 \quad 31} \\ 31 \end{array}$$

$\therefore$  Prime factor :  $2^3 \cdot 5^1 \cdot 31^1$

Tree diagram



$\therefore$  Prime factor of 1240:  $2^3 \cdot 5^1 \cdot 31^1$

Multiple method

$$1240 = 2 \times 620$$

$$= 2 \times 2 \times 310$$

$$= 2^2 \times 2 \times 155$$

$$= 2^3 \times 5^1 \times 31^1$$

$\therefore$  Prime factor of 1240 =  $2^3 \cdot 5^1 \cdot 31^1$

② Find the all factor of 1240

Ans: Total number of factor  $1240 = (3+1) \cdot (1+1) \cdot (1+1)$   
 $= 4 \cdot 2 \cdot 2$   
 $= 16$

Calculation of all factors:

$$\begin{aligned}1240 &= 1 \times 1240 \\ &= 2 \times 620 \\ &= 4 \times 310 \\ &= 5 \times 248 \\ &= 8 \times 155 \\ &= 10 \times 124 \\ &= 20 \times 62 \\ &= 40 \times 31\end{aligned}$$

$\therefore$  All the factors of 1240: 1, 2, 4, 5, 8, 10, 20, 31, 40, 62, 124, 155, 248, 310, 620, 1240.

③ Find the all prime factor of 1240

Ans: Prime factor of 1240 are: 2, 5, 31.

④ Find the all composit factor of 1240.

Ans: The composit factor of 1240: 4, 8, 10, 20, 40, 62, 124, 248, 155, 310, 620, 1240.