

B. Mathematics - III

Number system

Exercise:

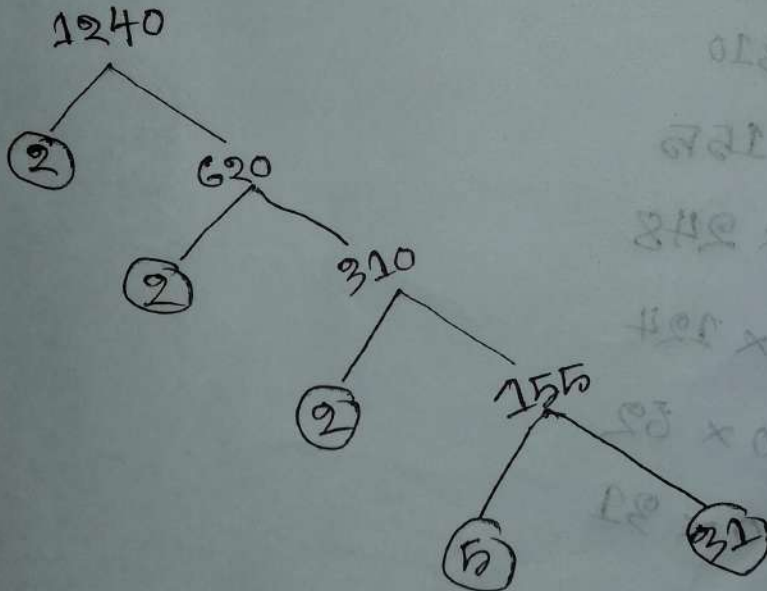
1. Division method:

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

Multiplication Method:

$$\begin{aligned} \underline{1240} &= 2 \times 620 = 4 \times 310 = 8 \times 155 \\ &= 8 \times 5 \times 31 \\ &= 2^3 \cdot 5 \cdot 31 \end{aligned}$$

Tree Diagram:



Therefore the prime factorization of 1240 is $= 2^3 \cdot 5 \cdot 31$

2.

Got it from number '1'

The Prime factorization of 1240 is $= 2^3 \cdot 5 \cdot 31$

So, the total number of factors of 1240 is

$$\begin{aligned} & (3+1) \cdot (1+1) \cdot (1+1) \\ & = 4 \cdot 2 \cdot 2 \\ & = 16 \end{aligned}$$

Calculation for all factors

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

The factors of 1240 are

1, 2, 4, 8, 5, 10, 20, 40, 31, 62, 124, 248, 155, 310, 620, 1240

3. The prime factors of 1240 is

2, 5, 31

4.

The composite factors of 1240 are

4, 8, 10, 20, 40, ~~41~~, 62, 124, 248, 155, 310, 620, 1240