⊛ Homework

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

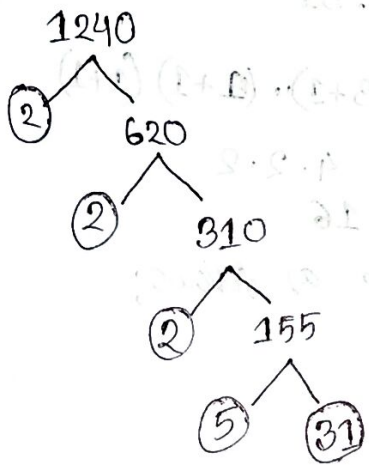
Answer:

1] Division method

$$\begin{array}{r|l} 2 & 1240 \\ 2 & 620 \\ 2 & 310 \\ 5 & 155 \\ & 31 \end{array}$$

∴ Prime factors are, $2^3, 5^1, 31^1$

2] Tree Diagram,



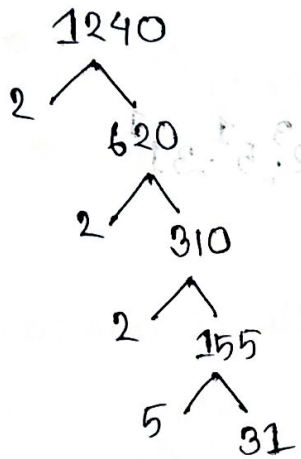
∴ Prime factors are, $2^3, 5, 31$

3. Multiplication method,

$$\begin{aligned} 1240 &= 2 \times 1240\,6 \\ &= 2 \times 620 \\ &= 2 \times 2 \times 310 \\ &= 2 \times 2 \times 2 \times 155 \\ &= 2 \times 2 \times 2 \times 5 \times 31 \end{aligned}$$

∴ Prime factors are $2^3, 5, 31$

2. Find the all factors of 1240 using tree diagram.



∴ Prime factors are $2^3 . 5^1 . 31^1$

∴ Total factors are, $(3+1)(1+1)(1+1)$

$= 4 \cdot 2 \cdot 2$

$= 16$

Calculation for all factors are as follows;

$1240 = 1 \times 1240$

$= 2 \times 620$

$= 4 \times 310$

$= 5 \times 248$

$= 8 \times 155$

$= 10 \times 124$

$= 20 \times 62$

$= 31 \times 40$

∴ Total factors are 1, 2, 4, 5, 8, 10, 20, 31, 40, 62, 124, 155, 248, 310, 620, 1240.

3. from the calculation above on number two, we can see the prime factors of 1240 are, 2, 5 and 31.

4. from the calculation above on number two, we can see the composite factors of 1240 are, 4, 8, 10, 20, 40, 62, 124, 155, 248, 310, 620, 1240.

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