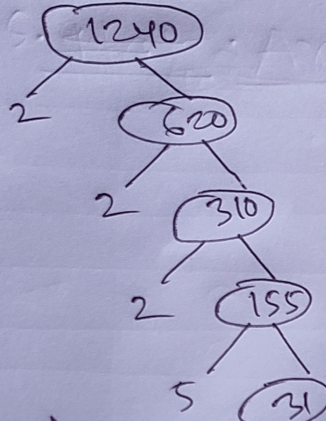


1. Find the prime factorization of 1240 using three different methods.

Division method

$$\begin{array}{r} 2 \overline{)1240} \\ \underline{2480} \\ 620 \\ 2 \overline{)620} \\ \underline{1240} \\ 310 \\ 2 \overline{)310} \\ \underline{620} \\ 155 \\ 5 \overline{)155} \\ \underline{155} \\ 31 \end{array}$$

Tree Diagram



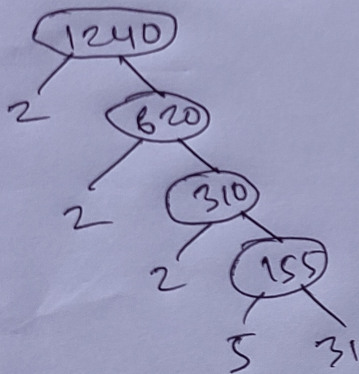
Multiplication method

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

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

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

Tree diagram



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

So, the total number of factors of 1240 is $(3+1)(1+1)(1+1) = 16$.

calculation for all factors

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

The ^{composite} factors of 1240 are 1, 2, 4, 5, 8, 10, 20, 31, 40, 62, 124, 155, 248, 310, 620, 1240.