

Exercise:

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

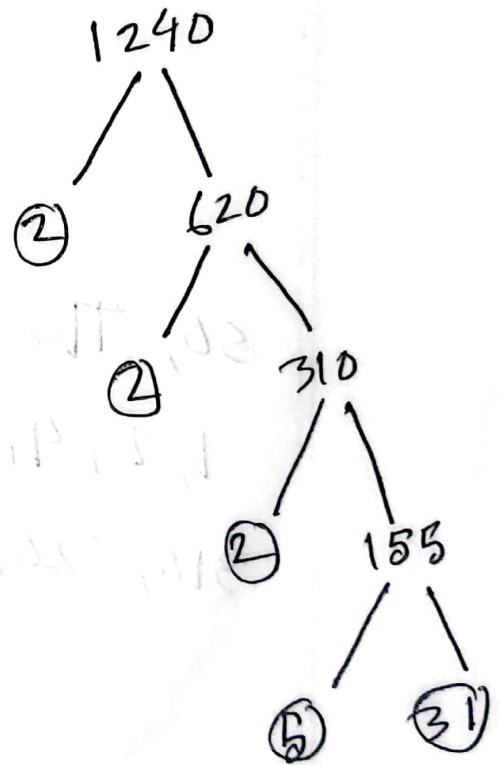
= Prime ~~fact~~ factorization of 1240:

* Division method:

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

$$= 2^3 \cdot 5 \cdot 31$$

* Tree method.



$$= 2^3 \cdot 5 \cdot 31$$

* Multiplication Method:

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

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

2. Calculation for all factors:

$$1240 = 1 \times 1240$$

$$= 2 \times 620$$

$$= 4 \times 310$$

$$= 5 \times 248$$

$$= 8 \times 155$$

$$= 10 \times 124$$

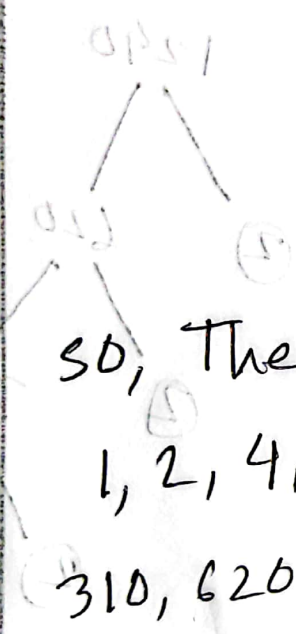
$$= 20 \times 62$$

$$= 31 \times 40$$

So, The factors of 1240 are:

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

310, 620, 1240



3. Find all the prime factors of 1240

$$1240 = 1 \times 1240$$

$$= 2 \times 620$$

$$= 4 \times 310$$

$$= 5 \times 248$$

$$= 8 \times 155$$

$$= 10 \times 124$$

$$= 20 \times 62$$

$$= 31 \times 40$$

So all the prime factors of 1240

are = 2, 5 and 31

4. Find all the composite factors of 1240:

$$1240 = 1 \times 1240$$

$$= 2 \times 620$$

$$= 4 \times 310$$

$$= 5 \times 248$$

$$= 8 \times 155$$

$$= 10 \times 124$$

$$= 20 \times 62$$

$$= 31 \times 40$$

So, all the composite factors are:

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