

Name: MD. Imrul Haque Siam

ID: 221-15-5473

Section: V

Date: 6-02-2022.

Subject: Math Topic: HW on Number System

Answer to the question No.- 1

Prime factorization of 1240 in three different methods.

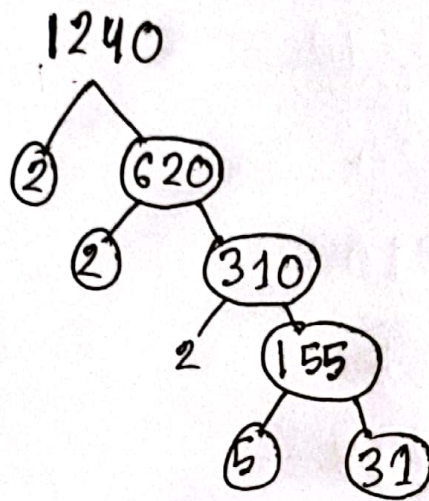
(i) Division method:

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

Factors of 1240 are $\rightarrow 2, 2, 2, 5, 31$ (ii) Multiplication method:

$$\begin{aligned}
 1240 &= 2 \times 620 \\
 &= 2 \times 2 \times 310 \\
 &= 2 \times 2 \times 2 \times 155 \\
 &= 2 \times 2 \times 2 \times 5 \times 31 \quad (\text{Ans})
 \end{aligned}$$

(iii) Tree diagram:



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

Answer to the question No.- 2

Got from number '1' the prime factorization of 1240 is $= 2^3 \cdot 5 \cdot 31$

So, the total number of factors

$$\text{of } 1240 \text{ are } = (3+1) \cdot (1+1) \cdot (1+1)$$

$$= 4 \cdot 2 \cdot 2$$

$$= 16$$

calculation of all factors

$$1240 = 1 \times 1240$$

$$= 2 \times 620$$

$$= 4 \times 310$$

$$= 8 \times 155$$

$$= 5 \times 248$$

$$= 10 \times 124$$

$$= 20 \times 62$$

$$= 40 \times 31$$

All factors of 1240 are $\rightarrow 1, 2, 4, 5, 8, 10, 20, 31, 40, 62, 124, 248, 155, 310, 620, 1240 = 16$ in total.

Answer to the question No.-3

On behalf of the answer of number '1' we said that the prime factors of

1240 are $\rightarrow 2, 5, 31$ (Ans)

Answer to the question No.-4.

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

So, the composite factors of 1240 are \rightarrow

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

in total 12 composite factors. (Ans)