

Number system

Q: ①

⇒ Division method:

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

Multiplication method:

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

The prime factorization of 1240 : $2^3, 5, 31$

Q: ②

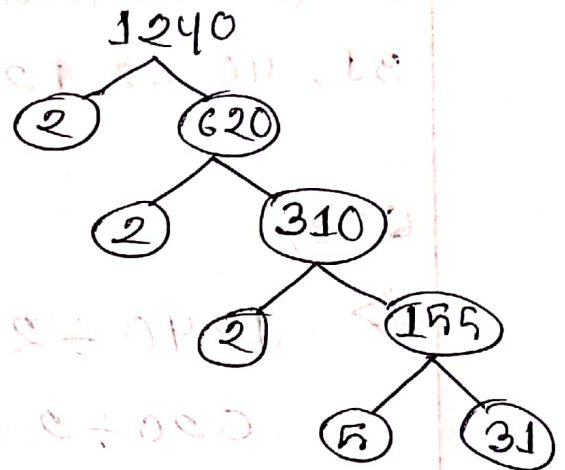
⇒ Total number of factors 1240

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

calculation of all factors:

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

Tree diagram:



$$= 20 \times 62$$

$$= 40 \times 31$$

All the factors of 1240 are: 1, 2, 4, 5, 8, 10, 20, 31, 40, 62, 124, 155, 248, 310, 620, 1240

Q: (3)

$$\Rightarrow 1240 \div 2 = 620$$

$$620 \div 2 = 310$$

$$310 \div 2 = 155$$

$$155 \div 5 = 31$$

$$31 \div 31 = 1$$

Prime factors of 1240 are: 2, 2, 2, 5, 31.

Q: (4)

\Rightarrow 1240 is not a prime number. It is a composite number.

1240 can be written as a product of prime factors. The prime factorization of 1240

$$1240 = 2 \times 2 \times 2 \times 5 \times 31$$

In exponential notation:

$$1240 = 2^3 \times 5 \times 31$$