Nazmul Huda Badhon

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Exercise :

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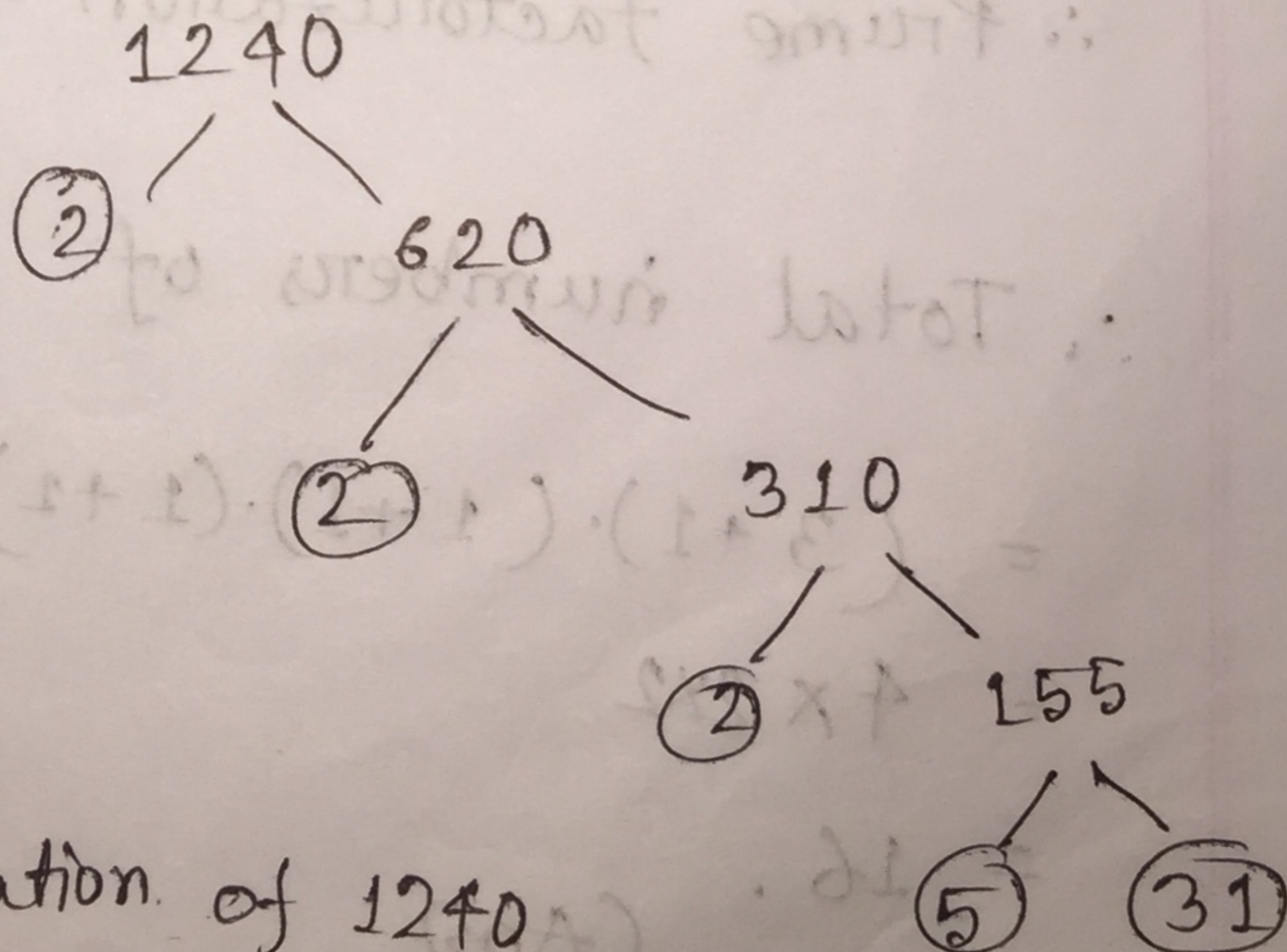
Answer:

a) Division method,

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

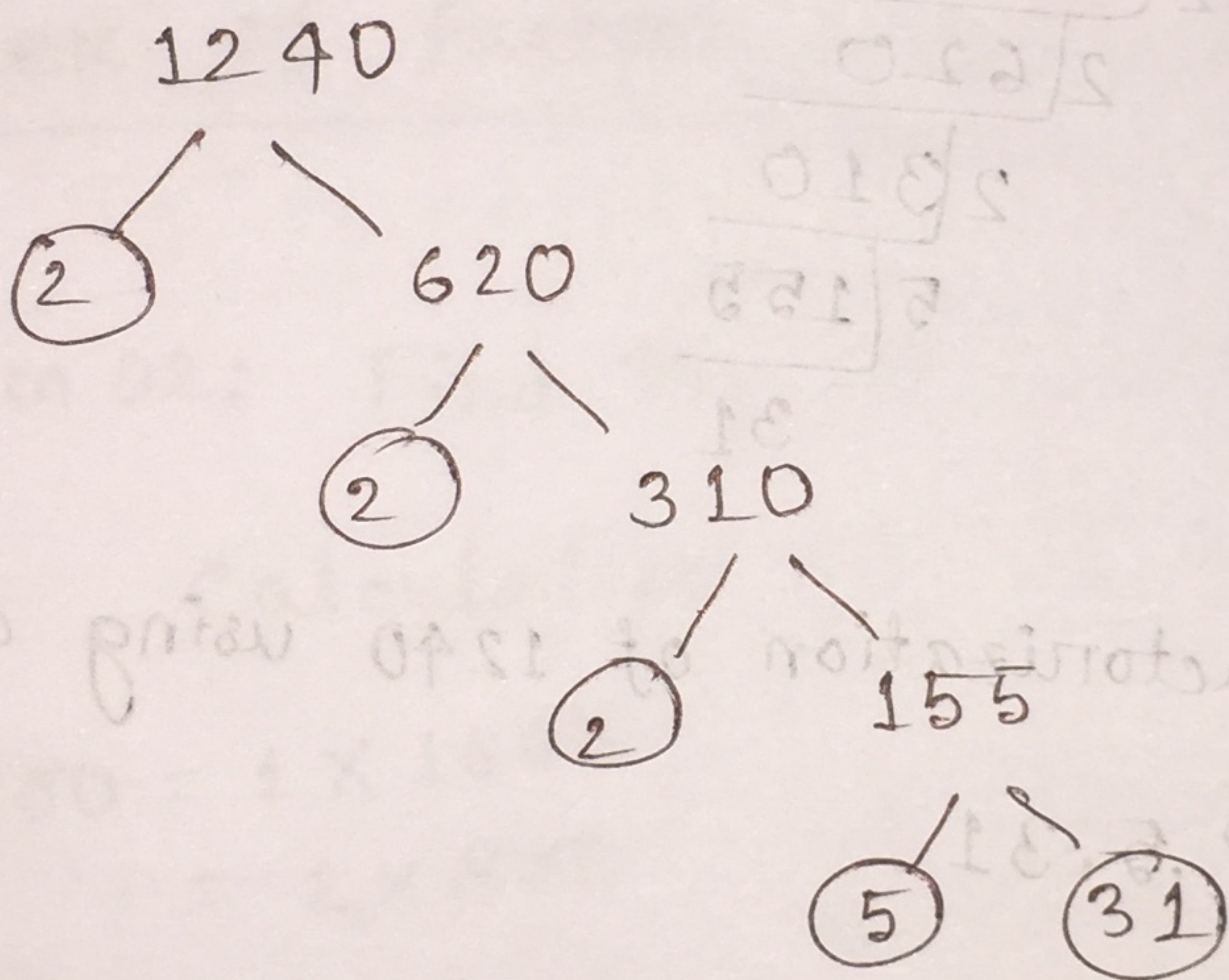∴ prime factorization of 1240 using division method

is $= 2^3 . 5 . 31$

b) Using tree method,

∴ Prime factorization of 1240

is $= 2^3 . 5 . 31$

1) Using multiplication method,

$$1240 = 2 \times 620 = 2 \times 2 \times 310 = 2 \times 2 \times 2 \times 155$$

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

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

1240

2   620

2   310

2   155

5   31

$\therefore$ Prime factorization = $2^3 \cdot 5 \cdot 31$

$\therefore$ Total numbers of all factors are is

$$= (3+1) \cdot (1+1) \cdot (1+1)$$

$$= 4 \times 2 \times 2$$

$$= 16 . \quad \text{(Ans)}$$

$$1240 = 1 \times 1240$$
$$= 2 \times 620$$
$$= \cancel{3 \times 310}$$
$$= 4 \times 310$$
$$= 5 \times 248$$
$$= \cancel{6 \times}$$
$$= 8 \times 155$$
$$= 10 \times 124$$
$$= 20 \times 62$$
$$= 40 \times 31$$

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

3. Find all the prime factors of 1240:

$$1240 = 1 \times 1240$$
$$= 2 \times 620$$
$$= 3 \times 3$$
$$= 4 \times 310$$
$$= 5 \times 248$$
$$= 8 \times 155$$
$$= 10 \times 124$$
$$= 20 \times 62$$
$$= 40 \times 31$$

The Prime factors of 1240 are—

2, 5, 31.

4. Find all the composite factors of 1240.

$$1240 = 1 \times 1240$$
$$= 2 \times 620$$
$$= \cancel{3} \times 4 \times 310$$
$$= 5 \times 248$$
$$= 8 \times 155$$
$$= 10 \times 124$$
$$= 20 \times 62$$
$$= 40 \times 31$$

The composite factors of 1240 are —

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