Number System (MAT-111)

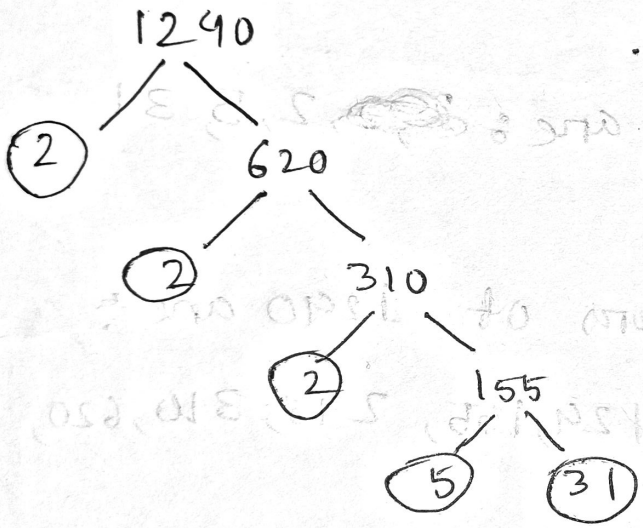
① Division method

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

(ii) Multiplication method:

$1240 = 2 \times 620$
$= 2 \times 2 \times 310$
$= 2 \times 2 \times 2 \times 155$
$= 2 \times 2 \times 2 \times 5 \times 31$

(iii) Tree Diagram



∴ the prime factorization of $1240 = 2 \times 2 \times 2 \times 5 \times 31$

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

total factors $= (3+1)(1+1)(1+1)$
$= 4 \cdot 2 \cdot 2$
$= 16$

② Calculation for all factors

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

Therefore, the factors of 1240 are=

1, 2, 4, 8, 5, 10, 20, 31, 40, 62, 124, 248, 155, 310, 620, 1240

(3) Prime factors of 1240 are =

$1240 = 1 \times 1240$

$= 2 \times 620$

$= 4 \times 310$

$= 8 \times 155$

$= 5 \times 248$

$= 10 \times 124$

$= 20 \times 62$

$= 31 \times 40$

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

(4) The composite factors of 1240 are :-

1, 4, 8, 10, 20, 40, 62, 124, 155, 248, 310, 620, 1240