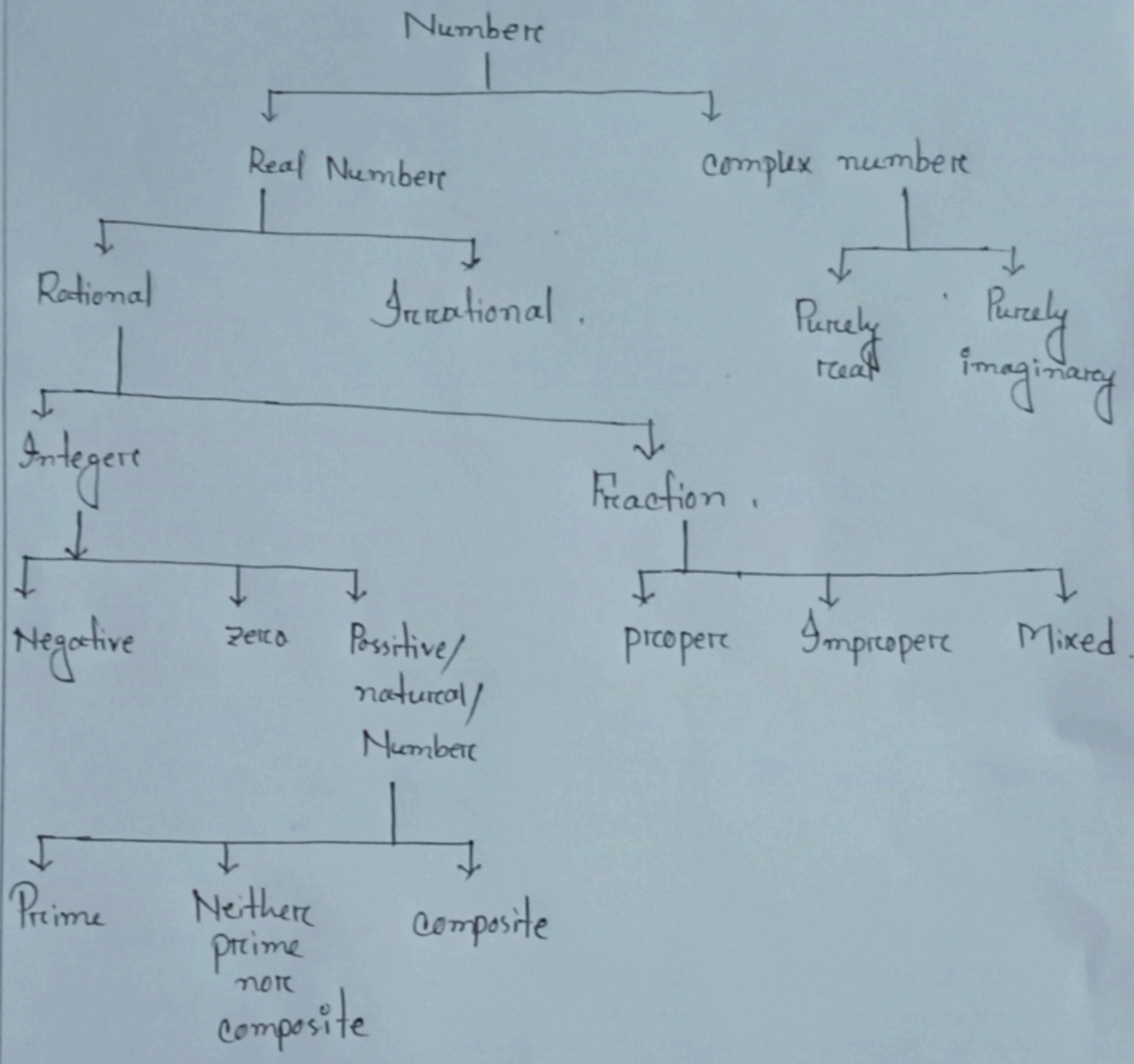
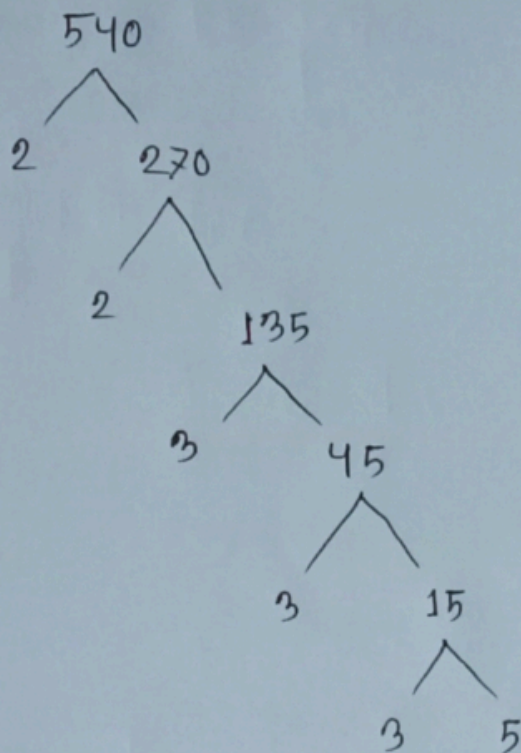


Q1. Classification of number system :



02. prime factorization of 540 :



Therefore, the prime factorization of 540 is
 $= 2^2 \cdot 3^3 \cdot 5$.

03.

From no. 02,

we have,

the prime factorization of 540 is $= 2^2 \cdot 3^3 \cdot 5$.

So, the total number of factors of 540 is

$$= (2+1)(3+1)(1+1)$$

$$= 3 \cdot 4 \cdot 2$$

$$= 24$$

calculation of all factors ,

$$540 = 1 \times 540$$

$$= 2 \times 270$$

$$= 3 \times 180$$

$$= 4 \times 135$$

$$= 5 \times 108$$

$$= 6 \times 90$$

$$= 9 \times 60$$

$$= 10 \times 54$$

$$= 12 \times 45$$

$$= 15 \times 36$$

$$= 18 \times 30$$

$$= 20 \times 27$$

\therefore The factors of 540 are ,

1, 2, 3, 4, 5, 6, 9, 10, 12, 15, 18, 20,
27, 30, 36, 45, 54, 60, 90, 108, 135,
180, 270, 540 .

04. GCD and LCM of 240 and 540 :

$$\begin{array}{r} 2 \overline{) 240} \\ 2 \overline{) 120} \\ 2 \overline{) 60} \\ 2 \overline{) 30} \\ 3 \overline{) 15} \\ 5 \end{array}$$

\therefore prime factorization of 240
 $= 2^4 \cdot 3 \cdot 5$.

$$\begin{array}{r} 2 \overline{) 540} \\ 2 \overline{) 270} \\ 3 \overline{) 135} \\ 3 \overline{) 45} \\ 3 \overline{) 15} \\ 5 \end{array}$$

\therefore prime factorization of
 $540 = 2^2 \cdot 3^3 \cdot 5$.

$$\begin{aligned} \text{GCD of 240 and 540 are} &= 2^2 \times 3 \times 5 \\ &= 4 \times 3 \times 5 \\ &= 60 \end{aligned}$$

$$\begin{aligned} \text{LCM of 240 and 540 are} &= 2^4 \times 3^3 \times 5 \\ &= 16 \times 27 \times 5 \\ &= 2160 \end{aligned}$$

— 0 —

05. H.C.F and L.C.M of 42, 63 and 140:

$$\begin{array}{r} 2 \overline{) 42} \\ 3 \overline{) 21} \\ \hline \end{array} \begin{array}{l} \times \\ \\ \end{array}$$

$= 2 \times 3 \times 7$

$$\begin{array}{r} 3 \overline{) 63} \\ 3 \overline{) 21} \\ \hline \end{array} \begin{array}{l} \times \\ \\ \end{array}$$

$= 3 \times 3 \times 7$

$$\begin{array}{r} 2 \overline{) 140} \\ 2 \overline{) 70} \\ 2 \overline{) 35} \\ 3 \overline{) 35} \\ \hline \end{array} \begin{array}{l} \times \\ \\ \times \\ \\ \times \\ \\ \end{array}$$

$$\begin{array}{r} 2 \overline{) 140} \\ 2 \overline{) 70} \\ 5 \overline{) 35} \\ \hline \end{array} \begin{array}{l} \times \\ \\ \times \\ \\ \end{array}$$

$= 2 \times 2 \times 5 \times 7$

\therefore H.C.F of (42, 63, 140) = 7

\therefore L.C.M of (42, 63, 140) = $2^2 \times 3^2 \times 7 \times 5$
 $= 1260.$

(Ans)