

Number of factors

गुणनखण्डों की संख्या

Factor $\rightarrow$ Limited होते हैं

(गुणनखण्ड) $\rightarrow$ प्रत्येक संख्या का सबसे छोटा Factor 1 होता है

$\rightarrow$ " " " " बड़ा " वह संख्या
संबंध होता है

6 → factors
1, 2, 3, 6
Limited

12 → 1, 2, 3, 4, 6, 12

Multiple
6, 12, 18, 24, 30
216, 600,
6000, 1200000
Unlimited

$$100 \rightarrow 1, 2, 4, 5, 10, 20, 25, 50, 100$$

Total $\Rightarrow$ 9 factors

prime factorization

અભાજ્ય ગુણાવરણ

$$100 \rightarrow 2^2 \times 5^2$$

$$\begin{array}{r|l} 2 & 100 \\ \hline 2 & 50 \\ \hline 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

Total No. of factors $\Rightarrow (power+1) \times (power+1) \dots$

$$(2+1)(2+1)$$

$$3 \times 3 = 9$$

$$\underline{100} \rightarrow 1, 2, 4, 5, 10, 20, 25, 50, 100$$

Total No. of factors $\Rightarrow 3 \times 3 \Rightarrow 9$

$$\leftarrow 3 \times 3$$

$$100 = 2^2 \times 5^2$$

No. of even factors $\Rightarrow$
 विषम गुणनखण्डों की संख्या

$$\left\{ \begin{array}{l} \text{2 की same} \\ \text{power} \end{array} \right\} \times (\text{power} + 1) \times \dots$$

$$\Rightarrow 2 \times (2+1) \Rightarrow 6$$

No. of Odd factors

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$$\left(\begin{array}{l} \text{2 की power} \end{array} \right)$$

$$(\text{power} + 1) \times \dots$$

$$2+1 \quad (1, 5, 25)$$

$$\Rightarrow 3$$

$$480 \rightarrow 2^5 \times 3^1 \times 5^1$$

$$\text{TNof} \rightarrow (\text{power}+1) \times (\text{power}+1) \times (\text{power}+1) \times (\text{power}+1) \dots$$

$$(\underline{5+1}) \times (\underline{1+1}) \times (\underline{1+1})$$

$$6 \times 2 \times 2 \Rightarrow \underline{24}$$

$$\text{Total No. of Even factor} \Rightarrow 2^{\text{diff power same}} \times (\text{power}+1) \times (\text{power}+1)$$

$$\Rightarrow 5 \times (1+1) (1+1)$$

$$\Rightarrow \underline{20}$$

$$\text{No. of odd factors} \Rightarrow (1+1) \times (1+1) \Rightarrow 4$$

$$\begin{array}{r|l} 2 & 480 \\ \hline 2 & 240 \\ \hline 2 & 120 \\ \hline 2 & 60 \\ \hline 2 & 30 \\ \hline 2 & 15 \\ \hline 3 & 5 \\ \hline \end{array}$$

$$480 \rightarrow 2^5 \times 3^1 \times 5^1$$

विषम $\leftarrow$

1



2^0

3^0

5^0

3^1

5^1

$\frac{3^1}{2}$

$\frac{5^1}{2}$

2^1

2^2

2^3

2^4

2^5

2^6

2^7

2^8

2^9

2^{10}



$$6 \times 2 \times 2 \Rightarrow 24$$

$$625 \rightarrow 5^4 \times 2^0$$

$$625 \rightarrow 1, 5, 25, 125, 625$$

$$T_{NoF} \rightarrow 4+1 \Rightarrow 5$$

$$T_{NoEF} \rightarrow 0 \times (4+1) \Rightarrow 0$$

$$T_{NoOF} \Rightarrow (4+1) \Rightarrow 5$$

$$\begin{array}{r|l} 5 & 625 \\ \hline 5 & 125 \\ \hline 5 & 25 \\ \hline 5 & 5 \\ \hline \end{array}$$

$$\boxed{Q^0 = 1}$$

$$\textcircled{2^0 = 1}$$

$$640 \rightarrow 2^{\times 7} \times 5^1$$

$$T_{NoF} \rightarrow (7+1) \times (1+1) \Rightarrow 16$$

$$T_{NoE_F} \rightarrow 7 \times (1+1) \Rightarrow 14$$

$$T_{NoO_F} \rightarrow (1+1) \Rightarrow 2$$

$$640 \Rightarrow 64 \times 10 \\ 2^6 \times 2 \times 5$$

$$540 \rightarrow 2^2 \times 3^3 \times 5^1$$

$$T_{\text{NoF}} \rightarrow (2+1) \times (3+1) \times (1+1) \Rightarrow 24$$

$$T_{\text{NoEF}} \rightarrow 2 \times (3+1) \times (1+1) \\ \Rightarrow 16$$

$$T_{\text{NoOF}} \rightarrow (2+1) \times (1+1) \\ 4 \times 2 \Rightarrow 8$$

$$540 \rightarrow 54 \times 10 \\ \Rightarrow 27 \times \underbrace{2 \times 2 \times 5} \\ \Rightarrow 2^2 \times 3^3 \times 5$$

$$1020 \rightarrow 2^2 \times 3^1 \times 5^1 \times 17^1$$

$$T_{NOF} \rightarrow (2+1) \times (1+1) \times (1+1) \times (1+1) \Rightarrow 2^4$$

$$T_{NOEF} \rightarrow 2 \times (1+1) \times (1+1) \times (1+1) \Rightarrow 16$$

$$T_{NOOF} \rightarrow (1+1)(1+1)(1+1) \Rightarrow 8$$

$$\begin{aligned} 1020 &\Rightarrow 102 \times 10 \\ &\Rightarrow 51 \times 2 \times 2 \times 5 \\ &= 17 \times 3 \times 2^2 \times 5 \end{aligned}$$

$$2660 \rightarrow \underbrace{2^2 \times 5^1 \times 7^1 \times 19^1}_{\text{अभाज्य}}$$

$$T_{NoF} \rightarrow (2+1)(1+1)(1+1)(1+1) \Rightarrow 24$$

$$T_{NoEF} \rightarrow 2 \times (1+1)(1+1)(1+1) \Rightarrow 16$$

$$T_{NoOF} \rightarrow 2$$

$$\begin{aligned} 2660 &\Rightarrow 266 \times 10 \\ &\Rightarrow 133 \times 2 \times 2 \times 5 \\ &\Rightarrow 7 \times 19 \times 2^2 \times 5 \end{aligned}$$

$$\frac{63}{134}^5$$

संख्या $\Rightarrow$

$$4^2 \times 7^2 \times 9^3 \times 10^5 \text{ के } \\ (\downarrow 2^2)^2 \times 7^2 \times (\downarrow 3^2)^3 \times (2 \times 5)^5$$

$$2^4 \times 7^2 \times 3^6 \times 2^5 \times 5^5$$

$$TNOF \rightarrow (9+1)(6+1)(5+1)(2+1) \Rightarrow 10 \times 7 \times 6 \times 3 \Rightarrow 1260$$

$$TNOEF \rightarrow 9 \times (6+1)(5+1)(2+1) \\ 9 \times 7 \times 6 \times 3 \Rightarrow 1134$$

$$TNOOF \rightarrow 7 \times 6 \times 3 \Rightarrow 126$$

$$2^9 \times 3^6 \times 5^5 \times 7^2$$

(समज्य)