

Divisibility, HCF & LCM Tricks and Formulas

Divisibility Tests

- A number is divisible by 2, if its unit's place digit is 0, 2, 4, or 8
- A number is divisible by 3, if the sum of its digits is divisible by 3
- A number is divisible by 4, if the number formed by its last two digits is divisible by 4
- A number is divisible by 8, if the number formed by its last three digits is divisible by 8
- A number is divisible by 9, if the sum of its digits is divisible by 9
- A number is divisible by 11, if, starting from the RHS, (Sum of its digits at the odd place) – (Sum of its digits at even place) is equal to 0 or 11x

HCF and LCM

$$\text{Product of two numbers} = \text{Their H. C. F.} \times \text{Their L. C. M.}$$

Application of H.C.F

The greatest natural number that will divide x , y and z leaving remainders r_1 , r_2 and r_3 , respectively, is the H. C. F. of $(x - r_1)$, $(y - r_2)$ and $(z - r_3)$

Application of L.C.M

The smallest natural number that is divisible by x , y and z leaving the same remainder r in each case is the L. C. M. of $(x, y \text{ and } z) + r$

H.C.F. And L.C.M. Of Fractions

$$\text{H. C. F. of fractions} = \frac{\text{H. C. F. of numerators of all fractions}}{\text{H. C. M. of denominators of all fractions}}$$

$$\text{L. C. M. of fractions} = \frac{\text{L. C. M. of numerators of all fractions}}{\text{H. C. F. of denominators of all fractions}}$$