



1. Dividend = Divisor x Quotient + Remainder
2. Divisor = $\frac{\text{Dividend} - \text{Remainder}}{\text{Quotient}}$
3. Quotient = $\frac{\text{Dividend} - \text{Remainder}}{\text{Divisor}}$
4. LCM of Fraction = $\frac{\text{LCM of Numerator}}{\text{LCM of Denominator}}$
5. HCF of Fraction = $\frac{\text{HCF of Numerator}}{\text{LCM of Denominator}}$
6. HCF X LCM = Product of Numbers
7. V – Vinculum
B – Bracket
O – Of
D – Division
M – Multiplication
A – Addition
S – Subtraction
8. Average = $\frac{\text{Sum of Observation}}{\text{No of Observations}}$
9. Average of first n natural nos. = $\left(\frac{n+1}{2}\right)$
10. Average of first n even nos. = (n+1)
11. Average of first n odd nos. = n
12. Average of consecutive numbers = $\frac{\text{First No.} + \text{Last No.}}{2}$
13. Average of n multiples of any number = $\frac{\text{Number} \times (n+1)}{2}$
14. Ratio : a:b
15. $a^2 : b^2$ is duplicate ratio of a : b
16. $a^3 : b^3$ is duplicate ratio of a : b
17. $\sqrt{a} : \sqrt{b}$ is subduplicate ratio of a : b
18. $\sqrt[3]{a} : \sqrt[3]{b}$ is subduplicate ratio of a : b
19. Proportion : a:b::c:d

20. Mean proportional between a and b is \sqrt{ab}
21. $\text{Rate \%} = \frac{\text{Result}}{\text{Original No.}} \times 100$
22. $\text{Increased \%} = \left(\frac{\text{Increment}}{\text{Original No.}} \times 100 \right) \%$
23. $\text{Decreased \%} = \left(\frac{\text{Decrement}}{\text{Original No.}} \times 100 \right) \%$
24. Profit = S. P. – C.P
25. Loss = C. P. – S.P
26. $\text{Profit \%} = \frac{SP - CP}{CP} \times 100$
27. $CP = \frac{SP}{\left(1 - \frac{\text{Profit \%}}{100} \right)}$
28. $\text{Loss \%} = \frac{CP - SP}{CP} \times 100$
29. $CP = \frac{SP}{\left(1 - \frac{\text{Loss \%}}{100} \right)}$
30. $SJ = \frac{P \times R \times T}{100}$
31. Amount = Principal + Interest
32. $\text{Speed} = \frac{\text{Distance}}{\text{Time}}$
33. $\text{Average Speed} = \frac{\text{Total Distance travelled}}{\text{Total time taken}}$
34. To convert speed in m/s from km/h multiply it with 5/18
35. To convert speed in km/h from m/s multiply it with 18/5
36. + x – = –
37. – x + = –
38. – x – = +
39. + x + = +
40. Acute angle $< 90^\circ$
41. Right angle = 90°
42. Obtuse angle $> 90^\circ$ but $< 180^\circ$
43. Straight angle = 180°
44. Reflex Angle $> 180^\circ$ but $< 360^\circ$

45. Complementary angles = 90°
46. Supplementary angles = 180°
47. Sum of all angles in triangle = 180°
48. Pythagoras Theorem
 $(\text{Hypotenuse})^2 = (\text{perpendicular})^2 + (\text{Base})^2$
49. Area of Rectangle = Length X Breadth
50. Perimeter of Rectangle = $2(\text{Length} + \text{Breadth})$
51. Diagonal of Rectangle = $\sqrt{(\text{length})^2 + (\text{Breadth})^2}$
52. Area of Square = $(\text{Side})^2$
53. Perimeter of square = $4 \times \text{Side}$
54. Diagonal of Square = $\sqrt{2} \times \text{Side}$
55. Area of Right angled Triangle = $\frac{1}{2} \times \text{Length} \times \text{Breadth}$
 $= \frac{1}{2} \times \text{Base} \times \text{Height}$
56. Volume of a cube = $(\text{Edge})^3$
57. Whole Surface Area of Cube = $6 \times a^2$
58. Volume of a Cuboid = $l \times b \times h$
59. Whole Surface area of Cuboid = $2(lb + bh + hl)$
60. Diagonal of Cuboid = $\sqrt{l^2 + b^2 + h^2}$
61. Diagonal of cube = $a\sqrt{3}$
62. $F = \frac{9}{5}C + 32 \rightarrow$ Conversion of $^\circ\text{C}$ to $^\circ\text{F}$
63. $F = \frac{5}{9}(F - 32) \rightarrow$ Conversion of $^\circ\text{F}$ to $^\circ\text{C}$
64. Length \rightarrow meter
65. Weight \rightarrow Gram
66. Time \rightarrow Second
67. Area \rightarrow Meter X Meter
68. Volume \rightarrow Meter X Meter X Meter
69. Currency \rightarrow Rupee
70. Liquid \rightarrow Litre