Formulae

Trapezoidal Rule

The approximate area under the curve y=f(x) when a ≤ x ≤ b is given by:

$\int_a^b ydx = \frac{h}{2}$ { Ist ordinate+last ordinate +2(sum of all other ordinates)}

Here h = $\frac{b-a}{n}$

a →	Lower limit of integral
b →	Upper limit of integral
n →	No. of intervals

- Here: No. of ordinates are one more than the no. of intervals
  OR
  No. of intervals are one less than the no. of ordinates.

- Ordinate → value of y

Simpson's Rule

The approximate area under the curve y=f(x) when a ≤ x ≤ b is given by:

$\int_a^b ydx = \frac{h}{3}$ { (Ist ordinate+last ordinate) +2(sum of all ordinates at odd no.) + 4(sum of ordinates at even no.)}

Here h = $\frac{b-a}{n}$

a →	Lower limit of integral
b →	Upper limit of integral
n →	No. of intervals

- Here: No. of ordinates are one more than the no. of intervals
  OR
  No. of intervals are one less than the no. of ordinates.

- Ordinate → value of y

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