

# Interpolation and Curve Fitting

1. WAP to find Newton Forward Interpolation.
2. WAP to find Newton Backward Interpolation.
3. WAP to find Gauss Forward Interpolation.
4. WAP to find Gauss Backward Interpolation.
5. WAP to find Stirling's Interpolation.
6. WAP to find Bessel's Interpolation.
7. WAP to find Lagrange's Interpolation.
8. WAP to find Newton Divided Difference.
9. WAP to find Spline's Interpolation (Cubic Spine Interpolation).
10. WAP to find Curve Fitting by Least Square of
  - a.  $y = a + bx$
11. WAP to find Curve Fitting by Multiple Linear Least Square of
  - a.  $y = a + bx$
  - b.  $y = a + bx + cx^2$
  - c.  $z = a + bx + cy$
12. WAP to find Curve Fitting by  $n$ th degree polynomial
$$y = a_0 + a_1x + a_2x^2 + \cdots + a_nx^n$$
13. WAP to find Linearization of non-linear laws with fitting curves of type
  - a.  $y = ax^n + b$
  - b.  $y = a + bx^2$
  - c.  $y = ax + bx^2$
  - d.  $y = ax + \frac{b}{x}$
  - e.  $y = ax^2 + \frac{b}{x}$
14. WAP to find Linearization of non-linear laws with fitting curves of type
  - a.  $y = ax^b$
  - b.  $y = ae^{bx}$
  - c.  $y = e^{ax+b}$
  - d.  $xy^a = b$