**ESO-208A**

**Computational Methods in Engineering**

**Assignment 3**

**2022-23 Semester-1**

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**Q1.**

Interpolated values of y at given x\*

Lagrange Polynomials :

-0.8000 -0.3793

-0.2000 0.8342

0.2000 0.8342

0.8000 -0.3793

**Chart, line chart

Description automatically generated**

Interpolated values of y at given x\*

Cubic Spline:

-0.8000 -0.0363

-0.2000 0.7716

0.2000 0.7716

0.8000 -0.0363

**Chart, line chart

Description automatically generated**

**Overlapped graph :**

**Diagram

Description automatically generated**

**Q2.**

coefficients of 1 degree polynomials

-1.860 15.363

coefficient of determination/r\_square for 1 degree polynomials

0.761

Chart, scatter chart

Description automatically generated

coefficients of 2 degree polynomials

2.917 -22.466 40.109

coefficient of determination/r\_square for 2 degree polynomials

0.980

Chart

Description automatically generated with medium confidence

coefficients of 3 degree polynomials

0.155 11.192 -36.585 47.596

coefficient of determination/r\_square for 3 degree polynomials

0.998

Chart, line chart

Description automatically generated

coefficients of 4 degree polynomials

1.027 -3.744 28.959 -52.383 49.056

coefficient of determination/r\_square for 4 degree polynomials

0.999

**Chart, line chart

Description automatically generated**

**Overlapped graph :**

**Chart, line chart

Description automatically generated**