

EE202 Numerical Methods for Engineers  
Laboratory Assignment: 2

\*\* Find solutions of the following questions in Matlab:

Question 1:

For a function, the following data is given. By using Linear Interpolation (First order polynomial interpolation by Newton's divided difference polynomial method) find  $y$  at  $x = 16$

| $x$  | $y$    |
|------|--------|
| 0    | 0      |
| 10   | 227.04 |
| 15   | 362.78 |
| 20   | 517.35 |
| 22.5 | 602.97 |
| 30   | 901.67 |

Question 2:

For a function, the following data is given. By using Quadratic Interpolation (Second order polynomial interpolation by Newton's divided difference polynomial method) find  $y$  at  $x = 16$ .

| $x$  | $y$    |
|------|--------|
| 0    | 0      |
| 10   | 227.04 |
| 15   | 362.78 |
| 20   | 517.35 |
| 22.5 | 602.97 |
| 30   | 901.67 |

Question 3:

For a function, the following data is given. By using third order polynomial interpolation by Newton's divided difference polynomial method, find  $y$  at  $x = 16$ .

| $x$  | $y$    |
|------|--------|
| 0    | 0      |
| 10   | 227.04 |
| 15   | 362.78 |
| 20   | 517.35 |
| 22.5 | 602.97 |
| 30   | 901.67 |