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**Question No. 1**

Solve the following initial value problem using the Euler Method.

Perform only two iterations.

𝒙𝒚 ′ + 𝒚 = 𝟐𝒚**2** 𝒍𝒏𝒙

𝒚(𝟏) = 𝟏. 𝟓 𝒙 ∈ [𝟏, 𝟑]

**Answer 1:**



By formula 

 As 𝒙 € [1,3]

**1st Iteration:**

 :. Ln 1 = 0



**2nd Iteration:**





**Question No. 2**

Construct a Lagrange interpolation polynomial of degree less than or equal to 2 that passes through the following points. (1,2), (2,3), (3,4)

**Answer 2:**

|  |  |  |
| --- | --- | --- |
| **1** | **2** | **3** |
| **2** | **3** | **4** |

Lagrange’s interpolating polynomial

formula is





Now Substitute 𝒙 = 2,

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