

Homework # 2

Of 10 marks

Upload a table of answers only

- 1) In deriving the three-point formulas, the derivative of the Lagrange polynomial $L'_0(x)$ at $x = x_0$ is:
a) 0 b) $\frac{2h}{3}$ c) $\frac{-3}{2h}$ d) $\frac{-1}{2h}$ e) none of the above
- 2) If $A = \begin{bmatrix} -1 & 1 \\ 1 & -2 \end{bmatrix}$, then $\|A\|_2 =$
a) $\sqrt{\frac{8+\sqrt{45}}{2}}$ b) $\sqrt{\frac{7+\sqrt{45}}{2}}$ c) $\sqrt{\frac{9+\sqrt{45}}{2}}$ d) $\sqrt{\frac{10+\sqrt{45}}{2}}$ e) none of the above
- 3) Given the IVP $y' = y \cos t, 0 \leq t \leq 1, y(0) = 1$ and $n = 5$. Then using the Euler's method. The approximation of the solution at $t=0.4$ equals:
a) 1.2216 b) 1.4352 c) 1.2145 d) 1.4399 e) none of the above
- 4) Given the IVP $y' = 1 - 0.2y + 0.25t, y(0) = 1, h = 0.5$, approximate $y(1.5)$ using Euler's method:
a) 2.26525 b) 2.778 c) 1.4 d) 1.8225 e) none of the above
- 5) Find the **second** iteration of the Gauss-Seidel method for the following linear system with $x^0 = (0, 0, 0)$
 $10x_1 - x_2 = 8$
 $-x_1 + 10x_2 - 2x_3 = 5$
 $-2x_2 + 10x_3 = 6$
Select one:
a) (0.85, 0.7, 0.7) b) (0.858, 0.729, 0.7458)
c) (0.858, 0.7232, 0.716) d) (0.8, 0.58, 0.716) e) none of the above

املا الاجابات في الجدول و ابعث الجدول فقط

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