DEPARTMENT OF COMPUTER SCIENCES

CSC2912 – Numerical Analysis

Tutorial Sheet III

---

1) Give the following points of the function f

x	0.0	0.2	0.4	0.6	0.8
f(x)	1.00000	1.49182	2.22554	3.32012	4.95303

2) Derive$P_4$the 4^{th}Lagrange polynomial

3) Use P_4 to approximate $f(0.5)$

4) Use Newton's forward divided differences to approximate $f(0.5)$

5) Use the Neville's iterated method to approximate $f(0.5)$

6) Suppose $P_{0,1,3}(x) = 2x$ and $P_{1,2,3}(x) = x + 3$ and $x_i = i$ for $i = 0, 1, 2, 3$. What is $P_{0,1,2,3}(3)$?