

Math 321-172

Quiz 2

Name:.....ID#:.....Sec:.....Ser:.....

Q.1: Find Natural and Clamped cubic splines for the following data

$$x = [2, 4, 5] \text{ and } f(x) = [1, 3, 5]$$

Q.2: Let $f(x) = xe^{x^2}$. Find fourth Taylor polynomial $P_3(x)$ about $x_0 = 0$. Also find:

(a) an upper bound for $|f(x) - P_3(x)|$, for $0 \leq x \leq 0.4$.

(b) Compute $f(0.2)$ using $P_3(0.2)$

Q.3: Use Bisection method to find the root x_3 for $f(x) = x^3 - 7x^2 + 14x - 6$ on the interval $[0, 1]$. Write value of $f(x_3)$.