Math 321-172 Quiz 1

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

Q.1: Compute $\max\limits_{0\le x\le 1} |f(x)|$, for $f(x) = \dfrac{2 - e^x + 2x}{3}$.

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

Also compute $f(0.2)$ using $P_3(0.2)$.

Q.3: Use Bisection method to find the root $p_1,\ p_2$ for $f(x) = x^3 - 7x^2 + 14x - 6$ on the interval $[0, 1]$. Write value of $f(p_2)$.

Q.4: For $2 + \sin(x) = x$, $2 \leq x \leq 3$, determine the number of iterations to find a fixed point accurate to within 10^{-5}.