Math 101-181-Sec.19 Quiz #5

Name: **ID:** **SR:**

Q.1: Find the absolute maximum and minimum-if exist- for the function $f(x) = 5x(2 - \ln(x))$ on $[1, e^2]$.

Q.2: Verify that $f(x) = x + \frac{1}{x}$ satisfies the hypotheses of Rolle's Theorem on $[\frac{1}{3}, 3]$. Then find a number c that satisfy the conclusion of Rolle's Theorem.

Q.3: If $f(x) = \frac{x^2+4}{2x}$. Answer the following:

a. Find the intervals of increasing and decreasing.
b. Find the local maximum and minimum values
c. Find the intervals of concavity and inflection points
d. Use the above information to sketch the graph of the function.