Problem 1

Find the critical points of the function $f(x) = x^{1/3}(x-3)$.

Problem 2

Find the critical points of $f(x) = |x^2 - 4|$.

Problem 3

Show that $f(x) = x^5 + x + 3$ has one one, and only one root. You must use the IVT and the MVT (or Rolle's Theorem) to get any credit.

Problem 4

What does the MVT say about the function $f(x) = x^3 + x^2 + 1$ on the interval $[1, 2]$?