Instructions: *Include all relevant work to get full credit. Write your solutions using proper notations. Encircle your final answers.*

Quiz #12

1. Find the critical numbers of the function:

    a. $f(x) = x^3 + 6x^2 - 15x$ [3]

    b. $g(x) = x^{4/5}(x-4)^2$ [3]

2. Find the absolute maximum and absolute minimum values of $f(x) = xe^{2x}$ on [-2, 1].   [4]

Bonus: State the **Extreme Value Theorem**. *You may use your own words.*   [1]