

3. **(7 points)** Consider the function $f(x) = 2x^3 + 3x^2 - 36x + 4$

(a) **(3 points)** Find the critical points of this function.

(b) **(2 points)** Find the global maxima and minima of this function if they exist, or explain why not, if not.

(c) **(2 points)** Find the maxima and minima of this function on the interval $[0, 4]$ if they exist, or explain why not, if not.

4. **(2 point bonus)** Give the equation of a function with infinitely many local extrema and only finitely many global extrema.