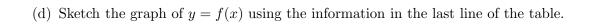
Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

- 1. [6 points] Consider the function $f(x) = 2x^3 12x^2 + 18x$.
 - (a) Find its first derivative and the critical points.

(b) Find its second derivative and the critical points.

(c) Construct the combined sign table for first and second derivatives.



2. [4 points] Use the second derivative test to find the relative extrema of the function $f(x) = x^4 - 8x^2 + 7$. Show all steps.