## QUIZ 5 - MATH 112 YOUR NAME:

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

1. Find the intervals of monotonicity and the relative extrema of the function

$$f(x) = \frac{4x}{x^2 + 4}.$$

2. Create the sign table for the first and the second derivative, clearly showing intervals of monotonicity, relative extrema, intervals of concavity and inflection points of the function

$$f(x) = x^3 + 6x^2 + 9x.$$

(You do not have to sketch the graph.)