QUIZ 2 - MATH 112 Friday, January 26

YOUR NAME:_____ George Voutsadakis

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 domain of the rational function $f(x) = \dfrac{x+5}{x^4 - x^3 - 6x^2}$.

2. Compute (and simplify) the difference quotient of the function $f(x) = x^2 - 7x$ at x.

3. (a) Plot the graph of $g(x) = -2x + 6$, showing the intercepts clearly (with labels).

(b) Plot the graph of $h(x) = -x^2 - 2x + 3$ showing the vertex and the intercepts clearly (with labels).

(c) Plot the graph of $f(x) = \begin{cases} -x^2 - 2x + 3, & \text{if } x < 1 \\ -2x + 6, & \text{if } x \geq 1 \end{cases}$ showing all points of interest clearly (with labels).