

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. Perform carefully all the steps needed (vertex, opening direction, x - and y -intercepts) and sketch the graph of the parabola $f(x) = -x^2 + 2x + 3$.

2. Find the domain of the rational function $f(x) = \frac{1}{2x^3 + 4x^2 - 6x}$. Show clearly all steps.