

YOUR NAME: \_\_\_\_\_

George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth 10 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Solve the equation  $\sqrt[3]{x^2 + 3x - 2} = 2$ .

2. Solve the equation  $(x - 1)^{-2/3} = 9$ .

3. Use the quadratic formula to solve the equation  $2x^2 - 3x - 6 = 0$ .

4. Use substitution to solve the equation  $x - 13\sqrt{x} + 36 = 0$ .

5. Two positive real numbers  $x$  and  $y$  differ by 4 and have a product of 4.

(a) Write two equations that reflect the data in the statement.

(b) Solve the system of equations to find the two numbers  $x$  and  $y$ .