

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. Simplify the following expressions:

(a) $\sqrt[4]{\frac{a^9}{16b^{12}}} =$

(b) $(x^{1/4}y^{1/2})^2(x^2y^3)^{1/2} =$

2. Simplify the expressions:

(a) $\frac{4}{2\sqrt{3}} + \frac{1}{\sqrt{5}} =$

(b) $\frac{\sqrt{2}}{\sqrt{6} + \sqrt{3}} =$

3. Solve the equation

$$\sqrt{x^2 + 3x + 6} = 4.$$

4. Solve the equation

$$\sqrt{x - 3} - \sqrt{x + 2} = -1.$$

5. Solve the equation

$$\frac{1}{x+2} - \frac{3}{1-x} = 1.$$