

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

$$f(x) = \frac{x^2 - 4}{x^2 + 4x - 21}.$$

2. Divide and write your answer in lowest terms:

$$\frac{2x^2 - 5x - 12}{4x + 6} \div \frac{x^2 - 16}{2} =$$

3. Subtract and write your answer in lowest terms. (Be careful when you choose common denominators!)

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

4. Simplify the complex fraction:

$$\frac{\frac{a}{b} + 1}{b^{-1} - a^{-1}} =$$