EXAM 3 - MATH 102 DATE: Tuesday, March 27 INSTRUCTOR: George Voutsadakis

Read each problem very carefully before starting to solve it. Each question is worth 5 points. It is necessary to show your work. Correct answers without explanations are worth 0 points.

GOOD LUCK!!

1. Use the matrix method to solve the following system of linear equations: (5 points)

- 2. (a) Use the special products to perform the indicated multiplication $[(2x 1) + 4y]^2$ (3 points)
 - (b) Factor completely $-12x^3 + 60x^2y 72xy^2$. (2 points)
- 3. Factor **completely** the following polynomials:
 - (a) $2x^6 32x^2y^4$ (2 points)
 - (b) $x^2 6x + 9 y^2$ (3 points)
- 4. (a) The hypothenuse of a right triangle is 8 inches longer than the shortest side and 1 inch longer than the remaining side. Find the lengths of the three sides of this right triangle. (4 points)
 - (b) Find the values for which the rational expression $\frac{x^2-4}{2x^2-11x-6}$ is undefined. (1 point)
- 5. Perform the operations and simplify:

(a)
$$\frac{x^2+4x+3}{x^2+5x+6} \cdot \frac{x^2-2x-8}{x^2-2x-3}$$
 (2 points)
(b) $\frac{x^3+x^2-x-1}{x+4} \div \frac{x^3+1}{x^2-16} \cdot \frac{1}{x^2-1}$ (3 points)