V1

1	2	3	4	5	6

Last Name:_____

First Name:_____

ID:_____ Section:____

Math 1051 Midterm #1. February 18, 2002

Attention! Please, note that this is the closed book test. You are not allowed to use graphing calculator. Simple calculators are allowed. Please, show all important steps in you solution but do not make your solution excessively long.

1. Multiply the polynomials. Put answer in the standard form

$$(x+a)(x^6 - ax^5 + a^2x^4 - a^3x^3 + a^4x^2 - a^5x + a^6).$$

2. Factor the polynomial completely

$$x^5 - 4x^3 + 8x^2 - 32.$$

3. Simplify assuming that both x and y are positive numbers

$$\left(\frac{x^3}{y^2}\right)^{3/2}\left(\frac{x^{1/2}}{y^{2/3}}\right)^{-3}.$$

4. Simplify the expression (complete factoring is not required in this example)

$$\frac{x^4 - 2x^3 + x^2 - x - 2}{x^2 - x - 2}.$$

5. Find the Least Common Multiple of

$$(x-1)^2, \quad (x^3-x^2), \quad (x^2+x-2).$$

6. Rationalize the expression

$$\frac{1}{(\sqrt{2}+2)(\sqrt{2}+1)}.$$