V2

1	2	3	4	5	6

Last Name:_____

First Name:_____

ID:_____ Section:____

Math 1051 Midterm #1. February 14, 2003

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 the answer in the standard form

$$(x^3 - xy^2 + y^3)(x + y).$$

2. Simplify mixed quotient

$$\frac{\dfrac{1}{x-1} - \dfrac{2}{x-2}}{\dfrac{1}{x} - \dfrac{2}{x-3}}.$$

3. Divide polynomial $x^3 + x^2 - 1$ by $x - 1$.
Leave the answer in the form: Dividend=Divisor$\times$Quotient + Reminder.

4. Find the Least Common Multiple (LCM) of the polynomials

$$x^3 - 9x, \qquad x^3 - 27, \qquad x^3 - 3x^2.$$

5. Factor the polynomial completely

$$x^3 + 3x^2 - x - 3.$$

6. Simplify the expression. Assume that $x > 1$

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