V4

1	2	3	4	5	6

Last Name:_____

First Name:_____

ID:_____ Section:____

Math 1051 Midterm #1. September 27, 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 the answer in the standard form

$$(x^2 - 2x + 1)(3x + 1).$$

2. Simplify the rational expression

$$\frac{x^3 + 27}{(x^3 + 7x^2) - (3x - 9)(x + 7)}.$$

3. Divide polynomial $x^5 + x - 2$ by $x - 1$.
Leave the answer in the form: Dividend=Divisor$\times$Quotient + Reminder.

4. Simplify mixed quotient. Rationalize the denominator in the final answer.

$$\frac{\dfrac{1}{\sqrt{2}-\sqrt{3}}}{\dfrac{1}{\sqrt{2}-\sqrt{5}}+\dfrac{1}{\sqrt{2}+\sqrt{5}}}.$$

5. Find the Least Common Multiple of

$$4x^2 + 5x + 4, \qquad 4x^2 - 15x - 4, \qquad 4x^2 + 9x + 2.$$

6. Simplify the expression. Assume that $x > 0$, $y > 0$, and $z > 0$

$$\frac{(x^{1/2}y^{1/3})^9}{z^{1/4}}\frac{z^{1/3}}{(x^{5/2}y^{4/3})^3}.$$