Algebra 201-007-50 03
Quiz 6
October 10, 2008

Name: SOLUTIONS

Student Number:

1. *(5 marks).* Simplify:

$$2x(x+3)^2 - (3x^3 + 4x^2 + 1)$$

$= 2x(x+3)(x+3) - 3x^3 - 4x^2 - 1$

$= 2x(x^2 + 3x + 3x + 9) - 3x^3 - 4x^2 - 1$

$= 2x(x^2 + 6x + 9) - 3x^3 - 4x^2 - 1$

$= 2x^3 + 12x^2 + 18x - 3x^3 - 4x^2 - 1$

$= -x^3 + 8x^2 + 18x - 1$

2. *(5 marks).* Divide by long division and write what the following equals:

$$\frac{9x^3 + 5x - 4}{3x + 1}$$

$$3x+1 \;\overline{)\; 9x^3+0x^2+5x-4 \;}\;\; 3x^2-x+2$$

$3x^2(3x+1) \longrightarrow -(9x^3+3x^2)$

$-3x^2+5x$

$-x(3x+1) \longrightarrow -(-3x^2-x)$

$6x-4$

$2(3x+1) \longrightarrow -(6x+2)$

-6

$$\therefore \frac{9x^3+5x-4}{3x+1} = 3x^2-x+2-\frac{6}{3x+1}$$