Dawson College: **Algebra**: 201-007-50 02

November 10, 2009

Name: SOLUTIONS

Student ID: _____

Quiz 8

Question 1. *(5 marks)* Multiply and divide and simplify:

$$\frac{2x^2-x}{4x^2-1}\cdot\frac{4x^2+4x+1}{3x}\div\frac{4x^2-2x-2}{6x^2-6x} = \frac{2x^2-x}{4x^2-1}\cdot\frac{4x^2+4x+1}{3x}\cdot\frac{6x^2-6x}{4x^2-2x-2}$$

$$= \frac{x(2x-1)}{(2x+1)(2x-1)}\cdot\frac{(2x+1)(2x+1)}{3x}\cdot\frac{6x(x-1)}{2(2x+1)(x-1)}$$

$$= \frac{6x}{6} = x$$

FACTORING: $4x^2+4x+1 = 4x^2+2x+2x+1$

$= 2x(2x+1)+(2x+1) = (2x+1)(2x+1)$

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

$= 2(2x^2-2x+x-1) = 2[2x(x-1)+(x-1)]$

$= 2(2x+1)(x-1)$

Question 2. *(5 marks)* Subtract and simplify:

$$\frac{3x-1}{x^2-10x+25}-\frac{3}{x-5} = \frac{3x-1}{(x-5)(x-5)}-\frac{3}{x-5}$$

$$= \frac{3x-1}{(x-5)(x-5)}-\frac{3(x-5)}{(x-5)(x-5)} = \frac{(3x-1)}{(x-5)^2}-\frac{(3x-15)}{(x-5)^2}$$

$$= \frac{(3x-1)-(3x-15)}{(x-5)^2} = \frac{14}{(x-5)^2}$$