

Algebra 201-007-50 C1

Quiz 9

November 6, 2008

Name:

Solution

Student ID:

1. (5 marks). Divide and simplify:

$$\frac{x^2 - 3x - 10}{x^2 - 5x} \div \frac{x^2 - 4}{x^2 - 2x}$$

$$\frac{x^2 - 3x - 10}{x^2 - 5x} \cdot \frac{x^2 - 2x}{x^2 - 4}$$

$$\frac{(x-5)(x+2)}{x(x-5)} \cdot \frac{x(x+2)}{(x+2)(x-2)}$$

$$= 1$$

2. (5 marks). Subtract and simplify:

$$\frac{2}{x^2 + x - 6} - \frac{4}{x^2 - 4x - 21}$$

$$= \frac{2}{(x+3)(x-2)} - \frac{4}{(x-7)(x+3)}$$

$$\text{LCD} = (x-7)(x+3)(x-2)$$

$$= \frac{2}{(x+3)(x-2)} \cdot \frac{x-7}{x-7} - \frac{4}{(x-7)(x+3)} \cdot \frac{x-2}{x-2}$$

$$= \frac{2x - 14 - 4(x-2)}{(x+3)(x-2)(x-7)}$$

$$= \frac{2x - 14 - 4x + 8}{(x+3)(x-2)(x-7)}$$

$$= \frac{-2x - 6}{(x+3)(x-2)(x-7)}$$

$$= \frac{-2(x+3)}{\cancel{(x+3)}(x-2)(x-7)}$$

$$= \frac{-2}{(x-2)(x-7)}$$