NAME: Solution

MAC 1147 Section 3089
Quiz One

Please show all of your work in a NEAT and ORGANIZED fashion.

1. (3 points) Rewrite the following expression with positive exponents and simplify:

$$\left(\frac{3x^2y^3}{4x}\right)^{-2} =$$

$$\left(\frac{4x}{3x^2y^3}\right)^2 =$$

$$\frac{16x^2}{9x^4y^6} = \frac{16}{9x^2y^6}$$

2. (3 points) Perform the multiplication and simplify:

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

$$\frac{(x+1)^2}{x+1} \cdot \frac{x-2}{(x-4)(x+1)} =$$

$$\frac{(x+1)(x-2)}{(x+1)(x-4)} =$$

$$\frac{x-2}{x-4}, \quad x \neq -1$$

3. (a) (1 point) Evaluate the following expression at $x = -1$:

$$2x^2 + 5x - 12$$

$$2(-1)^2 + 5(-1) - 12 =$$

$$2(1) - 5 - 12 = -15$$

(b) (2 points) Completely factor the following expression:

$$2x^2 + 5x - 12 =$$

$$2x^2 + 8x - 3x - 12 =$$

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

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