Last Name: _____

First Name: _____

Student ID: _____

Quiz 1 (A)

Question 1. *(3 marks)* Simplify the expression (express your answer with positive exponents only):

$$\left(\frac{x^3}{-27y^{-6}} \right)^{-2/3}$$

Question 2. *(3 marks)* Rationalize the numerator in the expression:

$$\frac{\sqrt[3]{a^2 b}}{c}$$

Question 3. *(6 marks)* Factor the following completely:

(a) $10x^2 - 23x + 12$

(b) $(x+2)^3 - 8$

(c) $x^3 - 3x^2 - 4x + 12$

Question 4. *(8 marks)* Simplify the following expressions:

(a) $\dfrac{1}{1 - \frac{1}{1+x}} + \dfrac{1}{1 - \frac{1}{1-x}}$

(b) $\dfrac{x + a^2 x^{-1}}{x - a^4 x^{-3}}$