

Last Name: _____

First Name: _____

Student ID: _____

Quiz 1 (B)

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

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

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

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

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

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

(b) $x^6 - 64$

(c) $7x^2 - 27x - 4$

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

(a) $\frac{1}{1 - \frac{1}{1+y}} + \frac{1}{1 - \frac{1}{1-y}}$

(b) $\frac{a - 9a^{-1}}{a + 4 + 3a^{-1}}$