

Last Name: SOLUTIONS

First Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

## Quiz 1 (B)

Question 1. Simplify the following expressions:

$$(a) (4 \text{ marks}) \frac{(2xy^{-3})^{-2}}{(3x^{-2}y^4)^{-3}} = \frac{2^{-2} x^{-2} (y^{-3})^{-2}}{3^{-3} (x^{-2})^{-3} (y^4)^{-3}} = \frac{2^{-2} x^{-2} y^6}{3^{-3} x^6 y^{-12}}$$

$$= \frac{3^3 y^6 y^{12}}{2^2 x^2 x^6} = \frac{27 y^{18}}{4 x^8}$$

$$(b) (3 \text{ marks}) \frac{(4x)^{3/2} y^{5/2}}{(xy)^{1/2}} = \frac{4^{3/2} x^{3/2} y^{5/2}}{x^{1/2} y^{1/2}} = (\sqrt{4})^3 x^{3/2-1/2} y^{5/2-1/2}$$

$$= 8xy^2$$

$$(c) (3 \text{ marks}) \sqrt[3]{x^{-2}} \cdot \sqrt{4x^5} = x^{-2/3} \cdot (4x^5)^{1/2}$$

$$= x^{-2/3} \cdot 4^{1/2} x^{5/2} = 2x^{5/2+(-2/3)}$$

$$= 2x^{11/6}$$