

Last Name: SOLUTIONS

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

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

## Quiz 1 (A)

Question 1. Simplify the following expressions:

$$(a) (4 \text{ marks}) \left( \frac{4x^{-1}y^{-40}}{2^{-2}x^4y^{-10}} \right)^{-2} = \frac{4^{-2}(x^{-1})^{-2}(y^{-40})^{-2}}{(2^{-2})^{-2}(x^4)^{-2}(y^{-10})^{-2}}$$

$$= \frac{4^{-2} x^2 y^{80}}{2^4 x^{-8} y^{20}} = \frac{x^2 x^8 y^{80}}{2^4 \cdot 4^2 y^{20}} = \frac{x^{10} y^{60}}{256}$$

$$(b) (3 \text{ marks}) \left( \frac{6^{1/5} \cdot 6^{3/5}}{6^{-1/5}} \right) = \frac{6^{1/5 + 3/5}}{6^{-1/5}} = \frac{6^{4/5}}{6^{-1/5}}$$

$$= 6^{4/5 - (-1/5)} = 6^{5/5} = 6$$

$$(c) (3 \text{ marks}) -\sqrt[4]{16x^4y^8} = - (16x^4y^8)^{1/4}$$

$$= - 16^{1/4} (x^4)^{1/4} (y^8)^{1/4}$$

$$= - 2xy^2$$