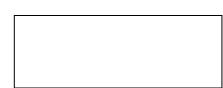## <u>Homework Questions 6 – Laws of Indices for Rational Exponents</u>

1. Write the following indices as a fraction

    a) 4^{-2}

    b) 3^{-4}

    c)

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

    d)

      $$\left(\frac{3x^5y^2}{2z^4}\right)^{-2}$$

2. Write the following indices as roots

    a) $4^{\frac{2}{3}}$

    b) $3^{\frac{5}{4}}$

    c) $5^{-\frac{2}{3}}$

    d) $6^{-\frac{6}{5}}$

3. Write the following roots as indices

a) $\sqrt[4]{x^5}$

b) $\dfrac{2}{\sqrt[3]{x^4}}$

c) $\dfrac{1}{\sqrt[10]{y^4}}$

d) $\sqrt[3]{x}$

4. Evaluate the following

a) $16^{\frac{1}{4}}$

b) $64^{\frac{1}{3}}$

c) $8^{\frac{2}{3}}$

d) $49^{\frac{3}{2}}$

e) $81^{\frac{1}{4}}$

f) $\left(\dfrac{1}{25}\right)^{-\frac{1}{2}}$

g) $\left(\dfrac{36}{49}\right)^{-\frac{3}{2}}$

h) $\left(\dfrac{125}{8}\right)^{-\frac{2}{3}}$