

Quiz Review Unit 4

$$1a) \frac{-36x^2y^7}{(-6x^5y^{-2})(3xy)}$$

$$= \frac{-36x^2y^7}{-18x^6y^{-1}}$$

$$= \frac{2y^8}{x^4}$$

$$b) \left(\frac{-3x^{-5}y^2}{6x^8y} \right)^{-4}$$

$$= \left(\frac{6x^8y}{-3x^{-5}y^2} \right)^4$$

$$= \left(\frac{-2x^{13}}{y} \right)^4$$

$$= \frac{(-2)^4 (x^{13})^4}{y^4}$$

$$= \frac{16x^{52}}{y^4}$$

$$c) \left(\left(x^{\frac{2}{3}} \right)^{\frac{1}{2}} \right)^{\frac{6}{1}}$$

$$= x^{\frac{2}{3} \times \frac{1}{2} \times \frac{6}{1}}$$

$$= x^2$$

$$d) (4x^3y^{-4})(-3x^{-5}y^6)$$

$$= -12x^{-2}y^2$$

$$= \frac{-12y^2}{x^2}$$

2. Evaluate ...

$$a) \frac{3^{-3} + 3^{-4}}{3^{-5}} \times \frac{3^5}{3^5}$$

$$= \frac{3^2 + 3}{3^0}$$

$$= \frac{9 + 3}{1}$$

$$= 12$$

$$b) \frac{2^{-3} + 2^2}{3^0}$$

$$= \frac{\frac{1}{8} + 4}{1}$$

$$= \frac{1}{8} + 4$$

$$= 4\frac{1}{8} \text{ or } \frac{33}{8}$$

$$c) \frac{4^{-4}}{4^{-5}} + \frac{4^0}{4^2}$$

$$= 4^{-4+5} + \frac{1}{16}$$

$$= 4 + \frac{1}{16}$$

$$= 4\frac{1}{16} \text{ or } \frac{65}{16}$$

$$2d) \frac{2^{-5}}{2^{-3} + 2^{-4}} \times \frac{2^5}{2^5}$$

$$= \frac{2^0}{2^2 + 2^1}$$

$$= \frac{1}{4 + 2}$$

$$= \frac{1}{6}$$

$$3. 17^{\frac{3}{5}} = \sqrt[5]{17^3} \text{ or } (\sqrt[5]{17})^3$$

$$4. (\sqrt{x})^4 = x^{\frac{4}{2}}$$

$$5a) \left(\frac{64}{27} \right)^{\frac{+2}{3}}$$

$$= \left(\sqrt[3]{64} \right)^2$$

$$= \left(\sqrt[3]{27} \right)^2$$

$$= \frac{4^2}{3^2} = \frac{16}{9}$$

$$b) \frac{1}{\sqrt[3]{81}}$$

$$= \frac{1}{3}$$

$$6a) 2^{2x+1} = 2^5$$

$$x = 2$$

$$b) 2^{x+7} = 4^{2x+5}$$

$$x = -1$$

$$2^{x+7} = (2^2)^{2x+5}$$

$$x+7 = 4x+10$$

$$3x = -3$$

$$x = -1$$