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Year Ten Advanced Homework Sheet # 2, Term 3

Name: _____ Due Date: _____

1. Simplify without using a calculator

a) $x^3 y^6 \times x^2 y^{-3} \times xy^4$

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

c) $mn^3 \div m^2 n^6$

d) $\left(\frac{8}{27}\right)^{-\frac{1}{3}}$

e) $\frac{2(2x^2 y)^3}{(4x^{-2} y^2)^2}$

f) $x^{\frac{2}{5}} \times x^{-\frac{1}{2}} \times x^{\frac{3}{2}}$

g) $\frac{x^{-3} y^2}{2xy^{-3}} \div \frac{4x^2 y^{-5}}{6xy^3}$

h) $\left(\frac{36x^2 y^2}{x^4 y^{-6}}\right)^{\frac{1}{2}}$

i) $\log_5 2 + \log_5 3$

j) $\log_4 8 - \log_4 2 + \log_4 3$