Name: KEY

Section 1.1b – Proficiency Check

Simplify Completely with only Positive Exponents:

Emerging	Proficient	Extending
$(2^{-2}ab^2c^4)^3$ $2^{-6}a^3b^6c^{12}$ $\frac{a^3b^6c^{12}}{64}$	$\frac{(3a^5b^4)^{-1}(4ab^{-2})^{-3}}{(a^3b)^4}$ $\frac{3^{-1}a^{-5}b^{-4}\cdot 4^{-3}a^{-3}b^6}{a^{12}b^4}$ $\frac{3^{-1}\cdot 4^{-3}a^{-8}b^2}{a^{12}b^4}$ $3^{-1}\cdot 4^{-3}a^{-20}b^{-2}$ $\frac{1}{3\cdot 4^3a^{20}b^2} = \frac{1}{192a^{20}b^2}$	$\left(\frac{9ab^{-1}}{8a^{-2}b^2}\right)^2\left(\frac{3a^2b^2}{2a^{-2}b^1}\right)^{-3}$ $\left(\frac{3^2a^3b^{-3}}{2^3}\right)^2\left(\frac{3a^4b}{2}\right)^{-3}$ $\frac{3^4a^6b^{-6}}{2^6}\cdot\frac{3^{-3}a^{-12}b^{-3}}{2^{-3}}$ $\frac{3a^{-6}b^{-9}}{2^3}$ $\frac{3}{8a^6b^9}$

Simplify completely with only Positive Exponents where necessary:

Emerging	Proficient	Extending
$4^{-\frac{1}{4}}\cdot 4^{-\frac{3}{4}}$ $4^{-4/4} = 4^{-1}$ $\frac{1}{4}$	$243^{-\frac{4}{5}}$ $\frac{1}{243^{4/5}}$ $\frac{1}{\sqrt[5]{243}^4} = \frac{1}{3^4}$ $\frac{1}{81}$	$\frac{\left(\frac{1}{2}\right)^x\cdot 16^x}{8^x}$ $\frac{2^{-x}\cdot 2^{4x}}{2^{3x}}$ $\frac{2^{3x}}{2^{3x}} = 1$

243
3 81
9 9
3 3 3 3