Name _____ Date _____

Simplifying Expressions with Negative Exponents Lesson

Problem: $(-5a^{-2}\ b)\ (-2a^{-3}\ b^2)$

There are a number of ways to <u>tackle</u> this problem.

Method 1: Remove the exponents

Step 1: $(-5a^{-2}\ b)\ (-2a^{-3}\ b^2) = \left(\frac{-5b}{a^2}\right)\left(\frac{-2b^2}{a^3}\right)$ **(Remove exponents by division)**

Step 2: $\left(\frac{-5b}{a^2}\right)\left(\frac{-2b^2}{a^3}\right) = \left(\frac{(-5*-2)(b*b^2)}{a^2*a^3}\right) = \left(\frac{10b^3}{a^5}\right)$ **(Combine values; process operations)**

Method 2: Find the product of like terms.

Step 1: $(-5a^{-2}\ b)\ (-2a^{-3}\ b^2) = (-5\ *\ -2)\ (a^{-2}\ *\ a^{-3})\ (b\ *\ b^2)$ **(Remove like terms)**

Step 2: $(-5\ *\ -2)\ (a^{-2}\ *\ a^{-3})\ (b\ *\ b^2) = 10a^{-5}\ b^3$ **(Combine values)**

Step 3: $10a^{-5}\ b^3 = 10b^3 * \frac{1}{a^5}$ **or** $\frac{10b^3}{a^5}$ **(Remove negative exponents)**