**Reviewing the Exponent Laws**

am is a power in exponential form where: ***m*** is the exponent ***a*** is the base ***m*** is a power of base *a*

In expanded form, am = a x a x a x a … (multiply ***a*** by itself as many times as given by the value of m, exponent)

To **simplify** an expression means to leave the final answer in exponential form.]

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| **RULE** | **EXAMPLE** | | **PRACTICE** |
| 1) MULTIPLICATION of POWERS  keep the base, add the exponents. |  | | Simplify |
| 2) DIVISION of POWERS  keep the base, subtract the exponents. |  | | Simplify |
| 3) POWER of a POWER  keep the base, multiply the exponents. |  | | Simplify |
| 4) POWER of a PRODUCT  distribute the exponent over the brackets to each term inside. Then apply rule #3 |  | | Simplify |
| 5) POWER of a QUOTIENT  same as rule #4 |  | | Simplify |
| 6) NEGATIVE EXPONENT  reciprocate the base, switch the sign of the exponent |  | = 9/4 | Simplify |
| 7) ZERO EXPONENT  depending on the sign of the base, it is either equal to 1 or -1 |  |  | Simplify |

**Ex1.** Use the exponent laws to simplify the following. (Remember more than one law can be used to simplify an expression completely.)

**a.** (4ab4)(-5a3b2) **b.** (12b2)(8b-4) ÷ (6b-10)

**c.** ( c2d3)4 **d**.

**Ex2.** Use the laws of exponents to simplify the following:

**a.**  **b.**

**c.**  **d.**