

Some Rules of exponents from Section 8-1

**Zero as an Exponent** Any number, except zero, raised to the zero power equals one. $a^0 = 1$  This means you should substitute the number 1 for anything raised to the zero power.**One as an Exponent** Any number raised to the first power is itself. $a^1 = a$  This means that if the exponent is one it is not necessary to write it. Also, if you don't see an exponent, it is assumed to be one.**Negative Exponents** Any number, except zero, raised to a negative exponent means to take the reciprocal. $a^{-n} = \frac{1}{a^n}$  also  $\frac{1}{a^{-n}} = a^n$  If something is in the numerator and has a negative exponent you are to move it to the denominator and change the exponent to a positive. Also, if something is in the denominator and has a negative exponent you are to move it to the numerator and change the exponent to a positive.

Use the above rules to simplify each. Write answers such that no exponents are zero or negative (positive exponents only!).

1.  $(478w^5)^0$

2.  $(678m)^1$

3.  $w^{-8}$

4.  $\frac{5}{w^{-9}}$

5.  $\frac{-2c^{-3}}{k^6}$

6.  $9A^{-3}B^{-5}$

7.  $\frac{R^{-3}D^0}{Q^{-4}}$

8.  $\frac{4^{-2}a^3b^{-4}}{2c^0d^{-1}}$

9.  $\left(\frac{x^3}{y^2}\right)^{-1}$