Algebra 1 Hwk #4 Sec 8-1 Spring 2015 Name

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 expoent 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.

Simplify each. Write answers without zero or negative exponents (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. $\left(\frac{x^3}{y^2}\right)^{-1}$

Evaluate each expression for $A = -4$ $B = 2$. Leave non-integer answers as fractions in reduced form. Suggestion: simplify each expression first by writing it without zero or negative exponents.

10. $A^{-2}B^3$

11. $\frac{10}{A^2B^{-1}}$