Name_____   Date_____

Math 8 Regents   **HW: Exponents w/s #6**

Laws of Exponents:

$x^2 \cdot x^7 = \boldsymbol{x^9}$ *When multiplying terms with the same base, keep the base and add the exponents*

$(x^2)^7 = \boldsymbol{x^{14}}$ *When an exponent is raised to another power, multiply the exponents*

$\frac{x^2}{x^7} = \boldsymbol{x^{-5}}$ *When dividing terms with the same base, keep the base and subtract the exponents*

$x^{-5} = \boldsymbol{\frac{1}{x^5}}$ *Writing the reciprocal of an expression will change the sign of the exponent*

Directions: Simplify each expression. Write your answers in exponential notation.

1.　$(w^2)^{11}$	2.　$x^5 \cdot x^4 \cdot y^2$
3.　$(m^3n^4)^7$	4.　$(-3g^2h) \cdot (2gh)$
5.　$(5^3)^4$	6.　$(4a^4b^2) \cdot (7ab^7)$
7.　$\dfrac{15x^2y^5}{3x^6y^2}$	8.　$\dfrac{8e^5}{2e^8}$
9.　$\dfrac{(a^2b)^4}{ab}$	10.　$\dfrac{6x \cdot 2x^2}{4x}$
11.　$\dfrac{35y^8z}{5y^5z}$	12.　$(4^5 \times 5^3)^{10}$