

Name \_\_\_\_\_

## Section 1.6

### Algebra II: Powers of Monomials

#### Essential Question:

How do I multiply exponents by other exponents?  
 $(x^2)^3$

#### Essential Rule:

To find the power of a power of a number—multiply the exponents

Examples:

1)

$$(x^4)^3 \quad \begin{array}{ccc} \text{XXXX} & \text{XXXX} & \text{XXXX} \\ = x^{12} & \text{or} & x^{4 \cdot 3} \end{array}$$

2) you find  $(y^5)^2$

— write it out the long way first.

3)

$$(ab)^3 = a^3 b^3$$

4)

$$(3a)^2 = 3^2 \cdot a^2 = 9a^2$$

5)

$$(-4y)^2 = (-4)^2 \cdot y^2 = 16y^2$$

Name \_\_\_\_\_

Powers of Monomials (multiply the exponents)

1)  $(x^2)^3$

2)  $(c^2)^5$

3)  $(ab)^4$

4)  $(5a)^2$

5)  $(x^2)^3$

6)  $(2a)^2$

7)  $(4n^2)^2$

8)  $(-3xy)^2$

9)  $(5x^3)^2$

10)  $(3x^2)^2$

11)  $(-2a^5)^2$

12)  $(2a^2b)^2$

13) Does  $(3x)^2$  equal  $3x^2$ , or does it equal  $9x^2$

14) Does  $(2x)^3$  equal  $2x^3$ , or does it equal  $8x^3$