Section 1.5

Algebra II: Multiplying Monomials (exponents)

Essential Question:
How do I multiply any two monomials? $$X^2 \cdot X^3$$

Essential Rule:

When you multiply two powers of the same number, add the exponents.

Examples:

1)

$$X^4 \cdot X^3 = XXXX \cdot XXX$$
$$= X^7$$

2) $(3a^2)(a^3)$ $(3 \cdot a \cdot a)(a \cdot a \cdot a)$
$$= 3(a \cdot a \cdot a \cdot a \cdot a)$$
$$= 3a^5$$

3)

$$X^5 \cdot X^7 = \qquad X^{5+7}$$

4)

$$n^6 \cdot n = n^{6+1} = n^7$$

5) $(2X^2)(3X^3) = (2 \cdot 3)(X^2 \cdot X^3)$
$$= 6X^{2+3}$$
$$= 6X^5$$

6) $(4a^2b)(-3ab^2) = (4 \cdot -3)(a^2 \cdot a \cdot b \cdot b^2)$
$$= -12a^{2+1} \cdot b^{1+2}$$
$$= -12a^3b^3$$

or

$$= 2 \cdot 3 \cdot xx \cdot xxx$$
$$= 6X^5$$
or $6X^{2+3}$

Name_____

Multiply the Monomials.

1) $(x^2)(x^4)$

2) $(n)(n^2)$

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

4) $(y^2)(y^3)$

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

6) $(x^4)(x)$

7) $(n^3)(n^4)$

8) $(2x)(2x^2)$

9) $(3x)(-2x^4)$

10) $(-x^2)(-4x)$

11) $(3x^2)(-2x^5)$

12) $(c^2)(-5c^3)$

13) $(2x^2)(4x^2y)$

14) $(5x^2y)(4xy^2)$

15) $(-6a^2)(4ab^5)$