

Name: Kelly

Date: _____

Day 7- Multiplying Monomials and Polynomials

Do Now: Multiply the following monomials below.

1. $3x(5x^2)$

$$15x^3$$

2. $6xy^3(9x^2y^9)$

$$54x^3y^{12}$$

3. $10x^3y(2x^2y^7)$

$$20x^5y^8$$

To multiply monomials and polynomials, we will use the distributive property and the exponent rules.

Method 1: Foil

Example:

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

$$3x^3 - 27x^2$$

Method 2: Box Method

Example:

$$4y(y+2)$$

	y	$+2$
$4y$	$4y^2$	$8y$

$$4y^2 + 8y$$

Practice:

1. $5x^6(2x^5 - x + 2)$

$$10x^{11} - 5x^7 + 10x^6$$

2. $-6x(3x^2 + 2x - 3)$

	$3x^2$	$+2x$	-3
$-6x$	$-18x^3$	$-12x^2$	$+18x$

$$-18x^3 - 12x^2 + 18x$$

Multiplying a Monomial times a Polynomial

Find each product.

1) $3(3r + 1)$

$$9r + 3$$

2) $7(5x + 4)$

$$35x + 28$$

3) $8n(7n + 3)$

$$56n^2 + 24n$$

4) $2b^3(b - 3)$

$$2b^4 - 6b^3$$

5) $6v^5(8v + 5)$

$$48v^6 + 30v^5$$

6) $8x(8x - 6)$

$$64x^2 - 48x$$

7) $2(5n - 4)$

$$10n - 8$$

8) $5(7a + 3)$

$$35a + 15$$

9) $7k(2k - 7)$

$$14k^2 - 49k$$

10) $6x(8x + 1)$

$$48x^2 + 6x$$

$$11) 7(4a^2 + 8a + 2)$$

$$28a^2 + 56a + 14$$

$$12) 4(p^2 - p - 1)$$

$$4p^2 - 4p - 4$$

$$13) 3k^2(k^2 + 7k - 3)$$

$$3k^4 + 21k^3 - 9k^2$$

$$14) 6x(7x^2 - x - 5)$$

$$42x^3 - 6x^2 - 30x$$

$$15) 5(5n^2 - 3n + 4)$$

$$25n^2 - 15n + 20$$

$$16) 3(4m^2 - 6m - 2)$$

$$12m^2 - 18m - 6$$

$$17) 5(2r^2 + 7r - 2)$$

$$10r^2 + 35r - 10$$

$$18) 8x^5(6x^2 - 8x - 1)$$

$$48x^7 - 64x^6 - 8x^5$$

$$19) 2n(3n^2 + 5n - 6)$$

$$6n^3 + 10n^2 - 12n$$

$$20) 5(5b^2 + b + 5)$$

$$25b^2 + 5b + 25$$