

Multiplying Polynomials and Binomial Expansion Notes

Name _____

Date _____

1. $2x(3x^2) \rightarrow x^1 \cdot x^2 = x^{1+2} = x^3$

$$6x^3$$

2. $3x^4(4x^3 - 5x^2)$

$$12x^7 - 15x^6$$

3. $(6x-5)(2x-7)$

$$12x^2 - 42x - 10x + 35$$

$$12x^2 - 52x + 35$$

4. $(2x-3)(x^2+2x-3)$

$$2x^3 + 4x^2 - 6x - 3x^2 - 6x + 9$$

$$2x^3 + x^2 - 12x + 9$$

5. $(3x+2y)(4x+5y)$

$$12x^2 + 15xy + 8xy + 10y^2$$

$$12x^2 + 23xy + 10y^2$$

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

$$x^4 + 2x^3 - 3x^2 + x^3 + 2x^2 - 3x - 6x^2 - 12x + 18$$

$$x^4 + 3x^3 - 7x^2 - 15x + 18$$

7. $3x(2x^3-9)(x^2+1)$

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

$$6x^4 - 27x$$

$$(6x^4 - 27x)(x^2+1)$$

$$6x^6 + 6x^4 - 27x^3 - 27x$$

8. $(2x+1)(2x^2-5y)(x^2+3)$

$$(2x+1)(2x^2-5y)$$

$$4x^3 - 10xy + 2x^2 - 5y$$

$$(4x^3 - 10xy + 2x^2 - 5y)(x^2+3)$$

$$4x^5 + 12x^3 - 10x^3y - 30xy + 2x^4 + 6x^2 - 5x^2y - 15y$$

$$4x^5 + 2x^4 - 10x^3y + 12x^3 - 5x^2y + 6x^2 - 30xy - 15y$$