

Algebra 12.2 Notes and Practice
Multiplying Polynomials

Name _____ Period _____

Warm Up

Write each polynomial in standard form.

1. $4x^3 + 3x^5 + 9x^4 - 2x + 11$

2. $7x^2 + 3x - 2x^4 + 8x^6 - 7$

Multiplying a Monomial and a Polynomial

Steps

Use the Distributive Property.

× Multiply the coefficients

+ Add the exponents of powers with the same base.

Simplify.

Exponent Product Rule

$$x^a \cdot x^b = x^{a+b}$$

$$x^3 \cdot x^4 = x^7$$

Simplify each product using the Distributive Property. Write the answer in standard form.

1. $3(2y + 4)$

2. $k(2k - 9)$

3. $-6p(p^4 - 8)$

4. $-4g^2(2g + 7)$

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

6. $-3n^3(n^2 - 2n + 8)$

7. $3ab(4a^2 - 7b^3)$

8. $-2x(3x - 4) + 7$

9. $5w(-7w + 3) - 2w(13 - 9w^2)$

Multiplying Binomials

Steps

Use the Distributive Property.

Distribute each term in the 1st binomial to each term in the other binomial.

Combine like terms.

Example

$$(x+2)(x+4)$$

First Outer, Inner Last

$$(a+b)(c+d) =$$
$$ac + ad + bc + bd$$

Simplify each product using FOIL or the Distributive Property. Write in standard form.

10. $(y+8)(y+1)$

11. $(k-4)(k+5)$

12. $(x-10)(x-4)$

13. $(t+2)(t-2)$

14. $(n-1)(5n-4)$

15. $(6a+2)(2a+3)$

16. $(2m-5)^2$

17. $5(2v+3)(3v-6)$

Look at Problem #17, do you recognize any of the forms of a quadratic equation... standard, vertex, and/or factored? How would you find the x-intercepts or roots?

