Honors Algebra 2 Unit 2 - Polynomials 2.6 – Test Review

Name: _____ Date: _____

Use the following to review for you test. Work the Practice Problems on a separate sheet of paper.

What you need to know & be able to do	Things to remember	Problem	Problem
Classify Polynomials	• Write all answers in **Standard Form** - Highest Exp to Lowest • Classify Polynomials based on Degree and # terms • Leading Coeff – First coeff in standard form • Constant – Term without a variable	1. List all the names for: **Degree:** 0 - _____ 1 - _____ 2 - _____ 3 - _____ 4 - _____ 5 - _____ **Number of terms:** 1 - _____ 2 - _____ 3 - _____ 4 - _____	2. $f(x) = x + 2 - x^2 - 4x^4$ standard form: _____ leading coefficient: _____ constant: _____ name by degree: _____ name by # terms: _____
Adding and Subtracting	Adding: • Combine like terms Subtracting: • Distribute the negative • Combine like terms	3. $(3x^2 + 7 + x) + (14x^3 + 2 + x^2 - x)$	4. $(1 - x^2) - (3x^2 + 2x - 5)$
Multiply Polynomials	• Distribute every term • Multiply numbers, add exponents	5. $(3x^2)(2x^2 + 9x - 6)$	6. $(x - y)(x^2 - xy + y^2)$
Combing Functions	Given: $f(x) = 2x^2 + 5x - 3$ $g(x) = -4x^2 + 5$	7. Find $f(x) - g(x)$	8. Find $g(x) \bullet f(x)$
Binomial Expansion	• KNOW Pascal's Triangle!!	9. $(y^2 - 3)^4$	10. $(4z + 5)^3$

Dividing Polynomials Factoring

Missing terms need "0"

Synthetic Division
- Find value of divisor
- Use coefficients
- Multiply and Add
- Answer – go down 1 degree

11. $(x^4 - 3x^3 - 7x - 14) \div (x - 4)$

12. $(4x^2 + 5x + 1) \div (x + 1)$

Long Division
- What makes ___?
- Multiply
- Subtract
- Bring Down

14. $(8x^4 + 2x^2 - 12x + 9) \div (x^2 + x - 3)$

15. $(6x^4 + 22x^3 - 1x^2 - 41x - 17) \div (3x + 5)$

16. $30x^5 + 12x^4 - 33x^3 + 24x^2 + 21x - 18) \div (5x^2 + 2x - 3)$