

Name: _____

Answers Only

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	<ul style="list-style-type: none"> Write all answers in Standard Form <ul style="list-style-type: none"> 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 - <u>constant</u> 1 - <u>linear</u> 2 - <u>quadratic</u> 3 - <u>cubic</u> 4 - <u>quartic</u> 5 - <u>quintic</u> Number of terms: 1 - <u>monomial</u> 2 - <u>binomial</u> 3 - <u>trinomial</u> 4 - <u>polynomial</u>	2. $f(x) = x + 2 - x^2 - 4x^4$ standard form: <u>$-4x^4 - x^2 + x + 2$</u> leading coefficient: <u>-4</u> constant: <u>2</u> name by degree: <u>quartic</u> name by # terms: <u>polynomial</u>
Adding and Subtracting	Adding: <ul style="list-style-type: none"> Combine like terms Subtracting: <ul style="list-style-type: none"> Distribute the negative Combine like terms 	3. $(3x^2 + 7 + x) + (14x^3 + 2 + x^2 - x)$ <u>$14x^3 + 4x^2 + 9$</u>	4. $(1 - x^2) - (3x^2 + 2x - 5)$ <u>$-4x^2 - 2x + 6$</u>
Multiply Polynomials	<ul style="list-style-type: none"> Distribute every term Multiply numbers, add exponents 	5. $(3x^2)(2x^2 + 9x - 6)$ <u>$6x^4 + 27x^3 - 18x^2$</u>	6. $(x - y)(x^2 - xy + y^2)$ <u>$x^3 - 2x^2y + 2xy^2 - y^3$</u>
Combining Functions	Given: $f(x) = 2x^2 + 5x - 3$ $g(x) = -4x^2 + 5$	7. Find $f(x) - g(x)$ <u>$6x^2 + 5x - 8$</u>	8. Find $g(x) \cdot f(x)$ <u>$-8x^4 - 20x^3 + 22x^2 + 25x - 15$</u>
Binomial Expansion	<ul style="list-style-type: none"> KNOW Pascal's Triangle!! 	9. $(y^2 - 3)^4$ <u>$y^8 - 12y^6 + 54y^4 - 108y^2 + 81$</u>	10. <u>$64z^3 + 240z^2 + 300z + 125$</u>

<p>Dividing Polynomials Factoring</p>	<p>Missing terms need "0"</p> <p>Synthetic Division</p> <ul style="list-style-type: none"> • Find value of divisor • Use coefficients • Multiply and Add • Answer - go down 1 degree 	<p>11. $(x^4 - 3x^3 - 7x - 14) \div (x - 4)$</p> <div style="border: 2px solid pink; padding: 10px; display: inline-block;"> $x^3 + x^2 + 4x + 9 + \frac{22}{x-4}$ </div> <div style="border: 2px solid pink; padding: 10px; display: inline-block; margin-left: 20px;"> $4x + 1$ </div>	<p>12. $(4x^2 + 5x + 1) \div (x + 1)$</p>
	<p>14. $(8x^4 + 2x^2 - 12x + 9) \div (x^2 + x - 3)$</p> <div style="border: 2px solid blue; padding: 10px; display: inline-block; width: 100%;"> $8x^3 + 24x^2 + 74x + 210 + \frac{639}{x-3}$ </div>	<p>15. $(6x^4 + 22x^3 - 1x^2 - 41x - 17) \div (3x + 5)$</p> <div style="border: 2px solid blue; padding: 10px; display: inline-block; width: 100%;"> $2x^3 + 4x^2 - 7x + 2 + \frac{-27}{3x+5}$ </div>	
	<p><u>Long Division</u></p> <ul style="list-style-type: none"> • What makes ___? • Multiply • Subtract • Bring Down 	<p>16. $30x^5 + 12x^4 - 33x^3 + 24x^2 + 21x - 18) \div (5x^2 + 2x - 3)$</p> <div style="border: 2px solid blue; padding: 10px; display: inline-block; width: 100%;"> $6x^3 - 3x + 6$ </div>	