Solving Polynomials "Quest" Review Guide – Do all work on a separate piece of paper! DIRECTIONS: Solve the following polynomials by the graphing method. Check each of your zeros algebraically to verify that they are solutions to the polynomial.

1)
$$x^{3} - 4x^{2} - 7x = -10$$

2) $4x^{3} - 8x^{2} + 4x = 0$
3) $2x^{3} + 5x^{2} = 7x$
4) $2x^{4} - 5x^{3} - 3x^{2}$
5) $4x^{3} = 4x^{2} + 3x$

6) State the formula for the SUM OF CUBES.

***Remember that you need to have both the sum and difference of cubes formulas memorized for tomorrow: along with the quadratic formula...

7) State the formula for the DIFFERENCE OF CUBES. tomo

DIRECTIONS: **FACTOR** and **SOLVE** the following polynomials. You need to make sure to pay attention as to when you need to use *sum/difference of cubes*, when to use *the quadratic pattern* and when to *factor out a GCF then completely factor*. ***The degree of the polynomial tells you how many solutions there are!***

8) $x^3 - 6x^2 + 9x = 0$	9) $x^3 + 27 = 0$	10) $x^4 - 8x^2 + 7 = 0$	11) $2x^3 - 18x^2 + 40x = 0$
12) $x^3 - 125 = 0$	13) $x^4 - 5x^2 + 4 = 0$	14) $3x^3 - 2x^2 - 5x = 0$	15) $27x^3 + 1 = 0$
16) $8x^3 - 27 = 0$	17) $x^4 + 4x^2 - 12 = 0$	18) $64x^3 - 216 = 0$	19) $x^4 - 4 = 0$

*** Expect to see a couple of questions about something that we covered on our last polynomial test as well... Maybe brush up on graphing polynomials or the process of long division?

Solving Polynomials "Quest" Review Guide – Do all work on a separate piece of paper! DIRECTIONS: Solve the following polynomials by the graphing method. Check each of your zeros algebraically to verify that they are solutions to the polynomial.

1) $x^3 - 4x^2 - 7x = -10$	2) $4x^3 - 8x^2 + 4x = 0$	3) $2x^3 + 5x^2 = 7x$
4) $2x^4 - 5x^3$	$x^{3} - 3x^{2}$	5) $4x^3 = 4x^2 + 3x$

6) State the formula for the SUM OF CUBES.

***Remember that you need to have both the sum and difference of cubes formulas memorized for tomorrow: along with the quadratic formula...

7) State the formula for the DIFFERENCE OF CUBES.

DIRECTIONS: **FACTOR** and **SOLVE** the following polynomials. You need to make sure to pay attention as to when you need to use *sum/difference of cubes*, when to use *the quadratic pattern* and when to *factor out a GCF then completely factor*. ***The degree of the polynomial tells you how many solutions there are!***

8) $x^3 - 6x^2 + 9x = 0$	9) $x^3 + 27 = 0$	10) $x^4 - 8x^2 + 7 = 0$	11) $2x^3 - 18x^2 + 40x = 0$
12) $x^3 - 125 = 0$	13) $x^4 - 5x^2 + 4 = 0$	14) $3x^3 - 2x^2 - 5x = 0$	15) $27x^3 + 1 = 0$
16) $8x^3 - 27 = 0$	17) $x^4 + 4x^2 - 12 = 0$	18) $64x^3 - 216 = 0$	19) $x^4 - 4 = 0$

*** Expect to see a couple of questions about something that we covered on our last polynomial test as well... Maybe brush up on graphing polynomials or the process of long division?