AA2 Fri wk 16 Chapter 5 Review Worksheet Name_________________

NO WORK = NO CREDIT!!!.....SHOW ALL WORK!

1. Use long division. $(x^3 - 5x + 8) \div (x - 2)$	2. For the given function, state the zeroes and give the multiplicity of multiple zeroes: $f(x) = 2x(x+2)(x-3)^3$	3. Use long division $(x^3 + x^2 - 22x - 40) \div (x + 4)$
4. Use synthetic division $(x^3 + x^2 - 22x - 40) \div (x + 4)$	5. Use synthetic division to determine if x - 4 is a factor of $x^3 + 64$	6. Write a polynomial function in standard form with the given zeroes. $\boldsymbol{x = 1, -2, 7}$
7-9 Factor completely. 7a) $27x^6 - 8$ 7b) $216x^3 - 125y^3$	8. $x^3 - 2x^2 + 3x - 6$	9. $x^3 - x^2 - 12x$

Ans:1. $x^2 + 2x - 1 + \frac{6}{x-2}$ 2. {0,-2,3(multiplicity of 3)} 3 & 4. $x^2 - 3x - 10$ 5. No
6. $f(x) = x^3 - 6x^2 - 9x + 14$ 7a. $(3x^2 - 2)(9x^4 + 6x^2 + 4)$
7b. $(6x - 5y)(36x^2 + 30xy + 25y^2)$ 8. $(x^2 + 3)(x - 2)$ 9. $x(x - 4)(x + 3)$

OVER ☺

10. List the possible rational roots of P(x) given by the Rational Root Theorem. $P(x) = x^3 - 2x^2 - 9x + 18$	11. Use synthetic division and the Remainder Theorem to determine the value of P(a) when $P(x) = 3x^4 + 6x^2 - 13x - 5$ $a = -2$	12-14. Simplify. Name by degree and number of terms. $(x-2)^2(3x-4)$
13. $(2x^2 - 6x^3 + 5) - (2x^2 + 8x - x^4)$	14. $(x^2 + 5) + (2x - 1)^2$	15-18 Use synthetic division and/or factoring to solve. Use {complex #s} $2x^3 - 7x^2 + 3x = 0$
16. $x^3 - 7x^2 + 15x - 9 = 0$	17. $x^5 - x^3 - 12x = 0$	18. $x^4 - 9x^2 + 18 = 0$

10. $\{\pm 1, \pm 2, \pm 3, \pm 6, \pm 9, \pm 18\}$ 11. 93 12. Cubic, polynomial of four terms
13. $x^4 - 6x^3 - 8x + 5$,quartic, polynomial of four terms 14. $5x^2 - 4x + 6$, quadratic, trinomial 15. $x = \{0, \frac{1}{2}, 3\}$ 16. $x = \{1, 3(mult\ 2)\}$ 17. $x = \{0, 2, -2, i\sqrt{3}, -i\sqrt{3}\}$
18. $x = \{\sqrt{6}, -\sqrt{6}, \sqrt{3}, -\sqrt{3}\}$