Algebra 3
Polynomial Factoring Review

Name: _____ Hour: _____

State what method you would use to factor the following polynomials. (you do Not have to factor them) Your options are: Sum/Difference of Squares/Cubes, Using Quadratic Form, Grouping

1. $14x^2 + 8x + 72$

2. $x^3 + 27$

3. $x^4 + x^3 - x - 1$

4. $4x^4 + 39^2 - 10$

5. $x^4 - 81$

6. $216x^3 + 1$

For the following problems, convert the expressions to the given form. You may have to factor a common term out first before converting.

7. $x^3 - 64$ $\rightarrow (a)^3 - (b)^3$

8. $6x^5 - 51x^3 - 27x$ $\rightarrow$ ___$(ax^4 + bx^2 + c)$

9. $3x^4 - 24x$ $\rightarrow$ ____$[(a)^3 - (b)^3]$

10. $81 - 16x^4$ $\rightarrow ax^4 + bx^2 + c$

Solve the following polynomials.

11. $3x^4 + 9x^3 + x^2 + 3x = 0$

12. $2x^3 - 5x^2 + 18x - 45 = 0$

13. $4x^4 - 5x^2 - 9 = 0$

14. $x^4 - 81 = 0$

15. $32x^3 - 4 = 0$

16. $128x^3 - 16$