Name: _____ **Unit** Polynomial Functions

Date: _____ **Bell:** _____ Factoring Polynomials

Directions: Complete the following rules.

1. Difference of Squares: $a^2 - b^2 =$ _____

2. Sum of Cubes: $a^3 + b^3 =$ _____

3. Difference of Cubes: $a^3 - b^3 =$ _____

4. How can you tell if you have completely factored a polynomial? _____

_____

Directions: Factor each polynomial **completely.** Make sure to check for a **GCF** first.

5. $x^4 - 36$	**6**
7. $k^3 - 27$	**8**
9. $3m^4 - 48n^2$	
11. $x^3y^2 - 343y^5$	

For 13-24, solve by factoring.

13. $x^4 - 12x^2 + 36 = 0$

15. $k^3 + 7k^2 - 44k = 0$

17. $-x^3 + 4x^2 + 21x = 0$

19. $9y^6 + 6y^4 + y^2 = 0$

21. $x^3 - 7x^2 + x - 7 = 0$

23. $3p^3 + 5p^2 - 12p - 20 = 0$