Name:	Date:
Topic:	Class:

Main Ideas/Questions	Notes/Examples
SOLVING POLYNOMIAL EQUATIONS *By Factoring*	① **MOVE ALL TERMS** to one side and set the equation **EQUAL TO 0.**
	② **FACTOR** the polynomial **completely!**
	③ **SET EACH FACTOR EQUAL TO 0** and **SOLVE** for each x-value.
	➢ For quadratic equations, solve by **square roots, completing the square,** or the **quadratic formula.** ➢ **SIMPLY** all **irrational** and **complex** solutions!

Directions: Solve each equation by factoring.

1. $x^3 + x = 0$

2. $4x^3 - 7x^2 = 3x^2$

3. $x^4 - 64 = 0$

4. $5x^5 - 80x = 0$

5. $x^3 + 125 = 0$

6. $8x^5 + 5x^2 = 4x^2$

7. $x^3 - 216 = 0$

8. $16x^3 = 54$

9. $x^4 + x^2 - 42 = 0$

10. $x^4 + 3 = 13 - 9x^4$

11. $x^3 - 8x^2 + 16x = 0$

12. $2x^6 - 10x^4 - 48x^2 = 0$

13. $3x^4 - 2x^2 = 16$

14. $5x^4 + 13x^2 - 8 = x^2 + 1$

15. $x^3 + 2x^2 + 5x + 10 = 0$

16. $2x^3 - 3x^2 - 32x + 48 = 0$