~Solve by Factoring Notes~

MCC9-12.A.REI.4: I can solve a quadratic equation with one variable.

1. **Quadratic Equation** – any _____where _____is the _____ exponent.
2. **Standard form of a quadratic equation:**

- Solutions and Roots:
  - The _____ is used to solve an equation when one side is zero and the other side is a product of polynomial factors
  - For example: m · n = 0, then m = 0 or n = 0. The solutions of such an equation are also called _____.

Example:
(x-3)(x+6) = 0
X - 3 = 0 *or* x + 6 = 0
X = 3 *or* x = - 6
The solutions(roots) of the equation are 3 and - 6

Examples:

1. (k + 1)(k – 5) = 0
2. (a + 1)(a + 2) = 0
3. (4k + 5)(k + 1) = 0
4. (2m + 3)(4m + 3) = 0

Factor and then Solve:

5. $b^2 + 3b - 28 = 0$
6. $x^2 + x - 42 = 0$

Solve:

$6x^2 + 12x = 0$

7. $b^2 + 14b = 0$

8. $24k^2 + 24k = 0$

What if we have a problem that looks like this…What should we do?

9. $7x^2 = -7x + 42$

Or like this…

10. $9p^2 - 36 = 0$

Review:

11. $x^2 = 2x$

12. $5k^2 - 5 = 0$

13. $5k^2 + 30 = -25k$

14. $n^2 = n$