



Objective: Solving Quadratics with the Zero Product Property

Homework QF-1 – NYA p.574 #1, 5, 9, 10, 11, 13, 27, 48

Do Now: Factor 1. $x^2 - 6x + 8$ 2. $2n^2 + n - 3$

Exam Prep: Which statement below represents the x-axis?

- A) $y = 0$ B) $x = 0$ C) $y = x$ D) $(0, 0)$

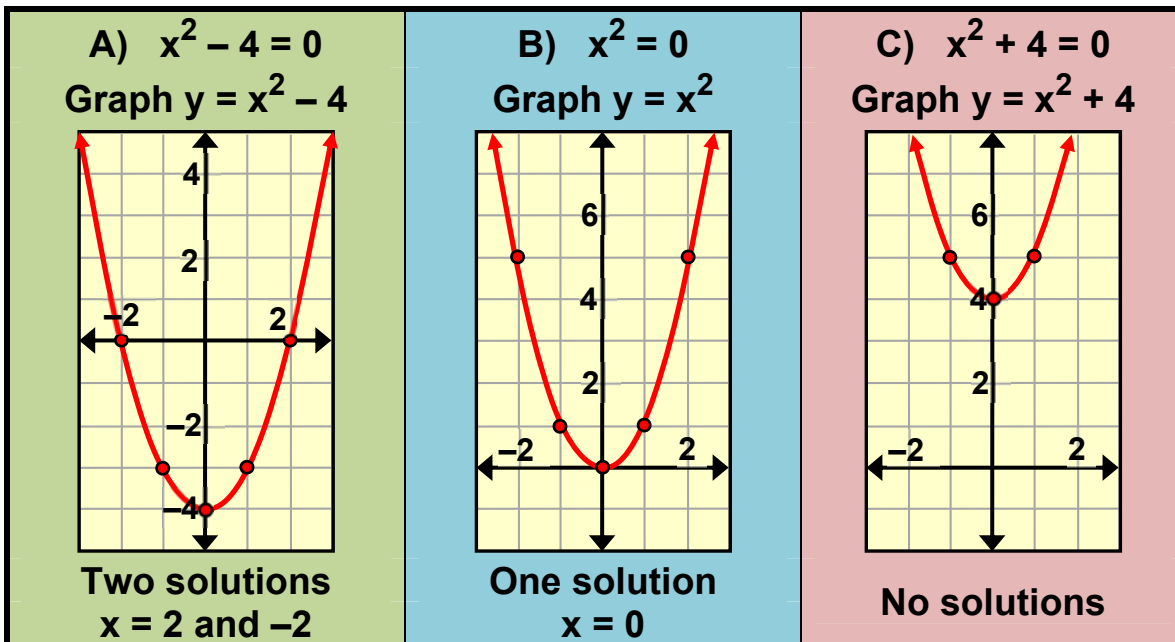


This is the beginning of solving quadratic equations...
In the end there will be many options... but most are crap.

Remember: Standard form of the Quadratic Equation is $ax^2 + bx + c$, with $a \neq 0$

One of the ways of solving a quadratic equation is to find the x-intercepts known as the roots of the equation, or zeroes of the function.

Quadratic Equations have two, one, or no solutions.



Zero-Product Property

For every real number a and b , if $ab = 0$, then $a = 0$ or $b = 0$.

| | | |
|-----------------------------|---------------------|---|
| Solve $(x + 5)(2x - 6) = 0$ | | Split both factors and solve each for x . Here you get two solutions. ----- Model Problem - Solve: $x^2 + 6x - 16 = 0$ |
| $x + 5 = 0$ | or $2x - 6 = 0$ | |
| $x = -5$ | $2x = 6$ $x = 3$ | |

Solve: Find the ROOTS of these equations

1. $(x - 10)(4x + 2) = 0$

2. $x^2 + 11x + 10 = 0$

3. $x^2 - 81 = 0$

4. $x^2 + 9x = -20$

5. $2n^2 + n - 3$

6. $x^2 - 6x + 9 = 0$