SOLVING QUADRATIC EQUATIONS BY FACTORING – Day 1

Recall that the **solutions** of a quadratic equation $ax^2 + bx + c = 0$ are the x-intercepts of the function, the point(s) where y = 0.

Because of this, some quadratic equations can be factored and solved using the Zero-Product Property, which says

If (a)(b) = 0, then a = 0 or b = 0.

Ex. If (x + 3)(x + 2) = 0, then x + 3 = 0 or x + 2 = 0.

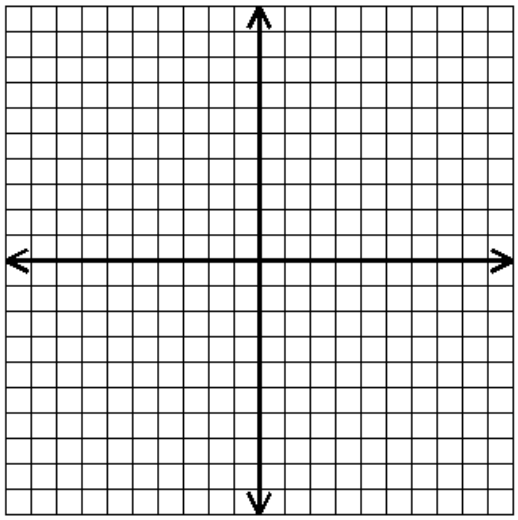
STEPS TO SOLVING A QUADRATIC EQUATION BY FACTORING:

1) Set = 0 (Standard Form)
2) FACTOR COMPLETELY
3) Set each factor = 0
4) Solve

Solve.

1) $(3n – 4)(3n + 5) = 0$	2) $x^2 + 3x – 28 = 0$
3) $-15 – 12x = -3x^2$	4) $3x^2 = 6x$

5) The area of a rectangular room is given by the equation $2w^2 - 2w = 12$, where w is the width of the room. Find the width, and sketch a graph of the related quadratic function.



_____ 6) Which statement about $k(x) = -x^2 - 2x + 15$ is true?

A. The zeros are –3 and 5, because $k(x) = -(x + 3)(x - 5)$.

B. The zeros are –5 and 3, because $k(x) = -(x + 5)(x - 3)$.

C. The zeros are –5 and –3, because $k(x) = -(x + 5)(x + 3)$.

D. The zeros are 3 and 5, because $k(x) = -(x - 3)(x - 5)$.