The Quadratic Formula

Hello! There are many techniques for solving quadratic equations: factoring, graphing, and completing the square are some of the most common. However, there is also a generic formula that can be used to solve a quadratic equation in standard form. When using the complete the square technique on the standard form quadratic, the values for x, in terms of A, B, and C are as follows: The opposite of B plus and minus the square root of the quantity B-squared minus four times A times C, all divided by two A will give us our x-values. This is an example of that derivation – read through the process if you are interested <pause>.

This is known as the Quadratic Formula, and can be used on any quadratic in standard form, when the A, B and C values are identified.

For example, when rewritten as a standard trinomial equal to zero, the A-value in this problem is two, B is negative one, and C is negative four. Now, by substituting into the formula and simplifying, we see the following: <silent>. So, without factoring, graphing, or completing the square, we have the two solutions for the quadratic! Let's try another. After rewriting in standard form, the A-value in this problem is one, B is four, and C is three. Now, by substituting into the formula and simplifying, we see the following: <silent>. Again, without factoring, graphing, or completing the square, we have the two solutions for the quadratic! What was interesting about these solutions is that both are nice, integer answers that could have been obtained by factoring, but the quadratic formula offers an alternative that works in any case.