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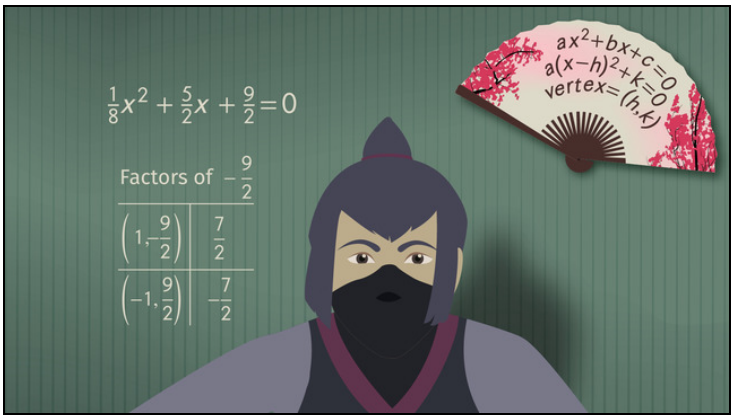
Solving Quadratic Equations by Completing the Square



1. **Identify the vertex form of a quadratic function.**
2. Determine the vertex of the parabola.
3. Find the zeroes of the quadratic equation.
4. Solve for the zeroes of each quadratic equation.
5. Calculate the vertex and zeroes of the quadratic equation.
6. Identify the graphs of the functions.

\+ with lots of tips, answer keys, and detailed answer explanations for all of the problems.

The complete package, **including all problems, hints, answers, and detailed answer explanations** is available for all sofatutor.com subscribers.

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Identify the vertex form of a quadratic function.

Select the correct answer.

Kata Ana is working on a new stunt that she's going to show her ninja instructor. It involves doing a backflip, and she needs to be able to model her jump using a quadratic function. Help her find the vertex form of a quadratic function. This form will help her calculate how high she is at the peak of her flip.

A ☐ $ax^2 + bx + c = 0$

B ☐ $a(x - h)^2 + k = 0$

C ☐ $a(x - p)(x - q) = 0$

D ☐ $ax^2 + bx = -c$

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Hints for solving these problems

1 of 6

Identify the vertex form of a quadratic function.

Hint #1

Remember that the standard form is the most simplified form. This is not the vertex form.

Hint #2

Remember that the vertex takes its name from the fact that it includes the coordinates of the parabola's vertex.

Hint #3

The vertex form gives the coordinates of the vertex as (h, k).

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Answers and detailed answer explanations for these problems

1 of 6

Identify the vertex form of a quadratic function.

Answer key: B

The standard form of a quadratic functon is $ax^2 + bx + c = 0$. This is the most simplified format, and is a trinomial.

The vertex form is $a(x - h)^2 + k = 0$. It reveals the coordinates of the vertex, which are (h, k).

The factored form of a quadratic function is $a(x - p)(x - q) = 0$. It shows the intercepts, which are p and q.

$ax^2 + bx = -c$ is a rearranged version of the standard form. It shows the first step in converting a standard form function into the vertex form. But it is not yet in the vertex form.

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