

**Explain the four-steps for solving quadratic equations. Can any of these steps be eliminated? Can the order of these steps be changed? Would you add any steps to make it easier, or to make it easier to understand? Could you provide an example using algebra?**

First of all we need to know what steps you mean.

General solution of quadratic equations:

$$ax^2 + bx + c = 0$$

1. Find discriminant:

$$D = b^2 - 4ac$$

2. Find discriminant root:

$$\sqrt{D} = \sqrt{b^2 - 4ac}$$

3. Determine solutions:

- If  $\sqrt{D} < 0$  there is no solution
- If  $\sqrt{D} > 0$  there are two solutions
- If  $\sqrt{D} = 0$  there is one solutions (or two solutions which equal to each other)

4. Find solutions

$$x_{1,2} = \frac{-b \pm \sqrt{D}}{2a}$$

In special cases solution can be found quicker. For example, if you can group equation, you automatically can solve it