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| **Steps to Proving the Quadratic Formula** | | |
| Order the steps to show how the quadratic formula is derived by completing the square of the general quadratic equation. The first and last step have been completed. | | |
|  | | |
| **1** | Start with the general quadratic equation: |  |
|  |  |  |
| **2** | Expand the bracket |  |
|  |  |  |
| **3** | Subtract from both sides of the equation: |  |
|  |  |  |
| **4** | Divide through by : |  |
|  |  |  |
| **5** | Add to both sides of the equation: |  |
|  |  |  |
| **6** | Complete the square for : |  |
|  |  |  |
| **7** | Subtract from both sides: |  |
|  |  |  |
| **8** | Take the square root of both sides: |  |
|  |  |  |
| **9** | Put over a common denominator: |  |
|  |  |  |
| **10** | Write the right hand side as a single fraction. This gives the quadratic formula: |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1** |  |  |  |  |  |  |  |  | **10** |