Completing the Cube: Solution Method for Cubic Equations

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Abstract

This paper outlines an attempt to create a new method to solve cubic equations. This method was created based off of the completing the square method used to solve quadratic equations, and it was created with hopes of being more efficient and more useful than current methods used to solve cubic equations. Creating the method was first approached by solving cubic equations with previously known solutions by setting one side equal to a perfect cubic, and factoring the other side. I found success with this and was able to create a general method, but after further attempts, I found that the method would only work when the perfect cubic on the one side of the equation was also one of the roots of the equation. Through further investigation I was not able to find a way around this. To manage this, I had to use the Rational Root Theorem to give me possible roots to test for. Therefore, the method I had created, while applicable at times, is extremely limited and not the improvement of any current methods that I was hoping to create.