

## **Convergences of Newton's Method for Quadratics**

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We will discuss introducing ideas from experimental mathematics into a Computing for Mathematicians class. We will focus on how the class can be led to rediscover some very pretty facts about Newton-Raphson (or the Babylonian) method to approximate square roots. We furthered this experiment by developing an equation to describe the convergences of Newton's Method in the real and complex planes. This allowed for the prediction of chaotic behavior.

Keywords: Newton's Method, experimental mathematics, computing