Welcome to MATH2250 - Calculus

Section: 24968

Your Instructor: Daniel Mckenzie

University of Georgia

January 5, 2016

What is Calculus about?

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Differential Calculus in a nutshell:

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And some cannot.

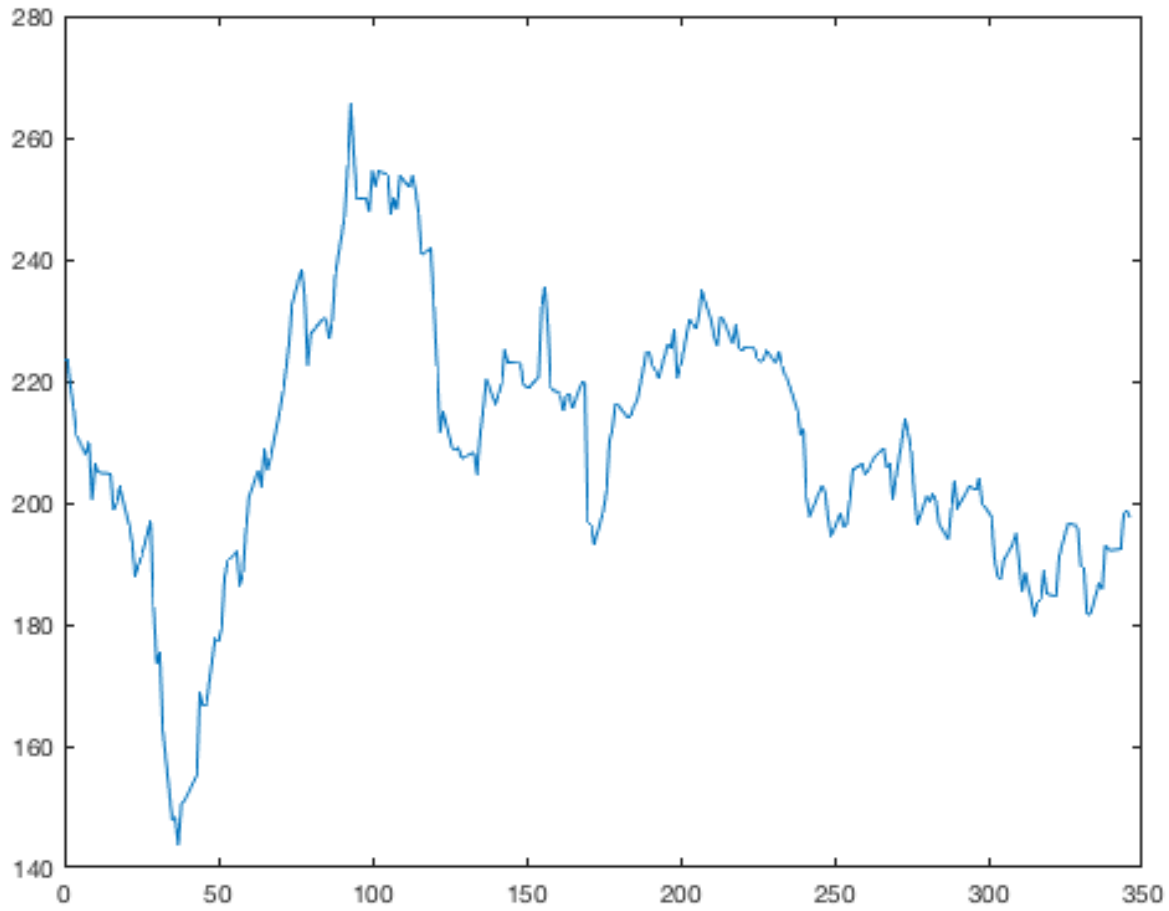
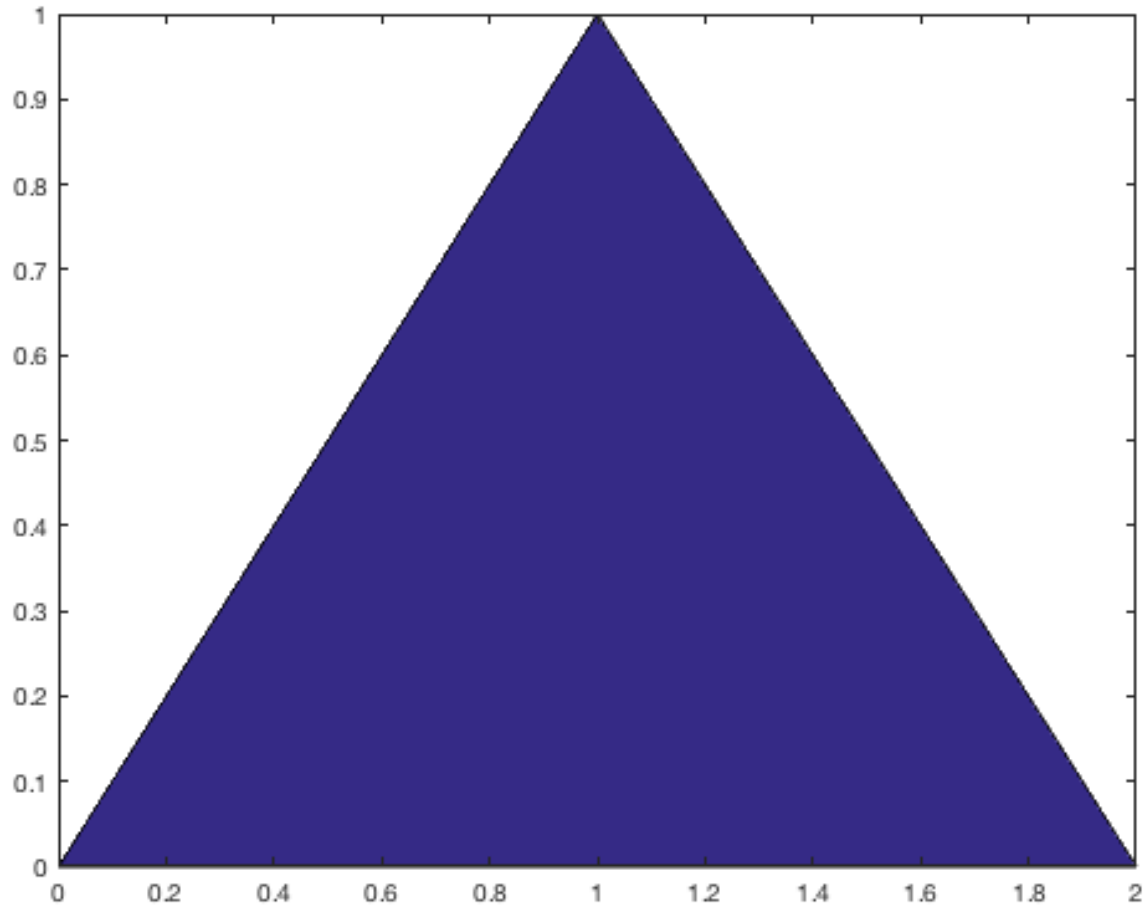
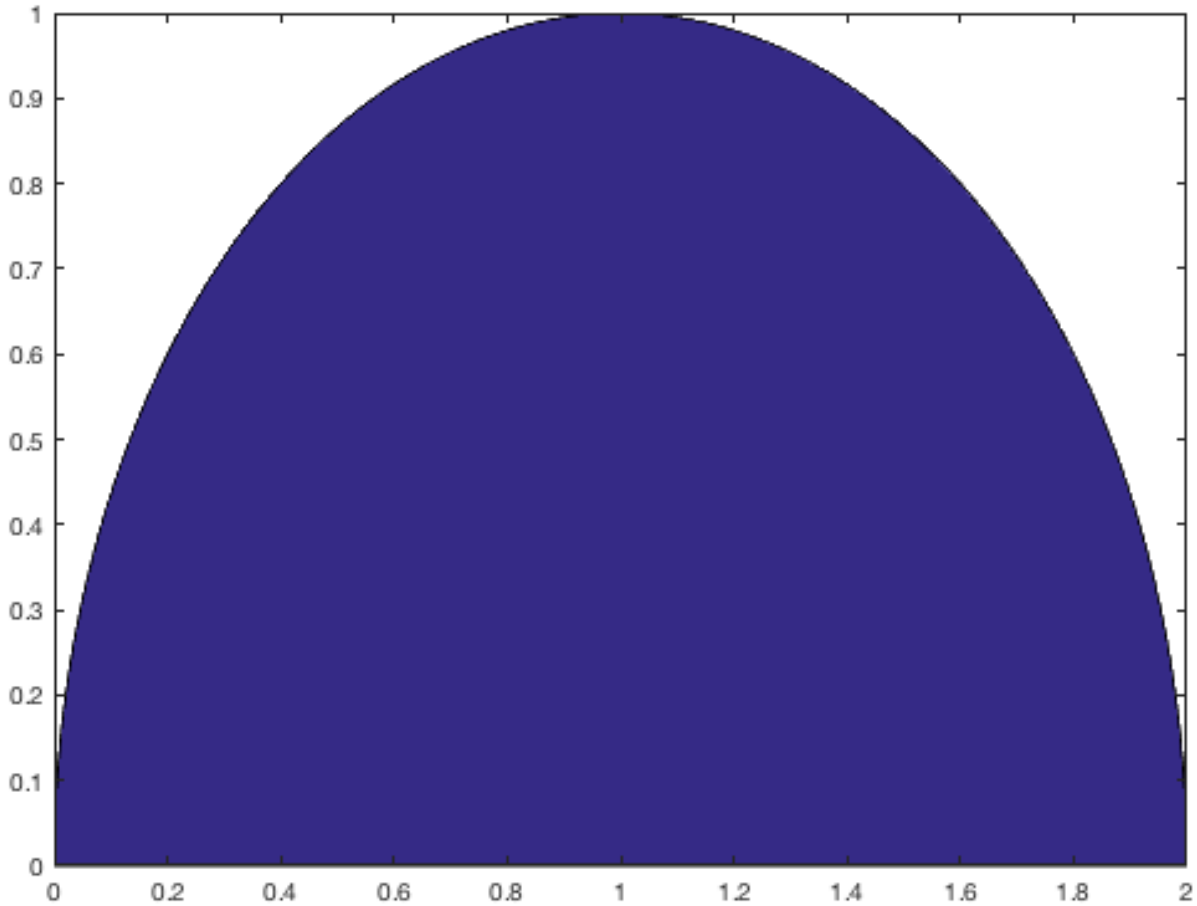


Figure: Tesla stock price at close. 2nd January 2016 to 16th December 2016

Integral Calculus in a nutshell

We know how to compute areas of basic shapes:




1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2

But what about this?

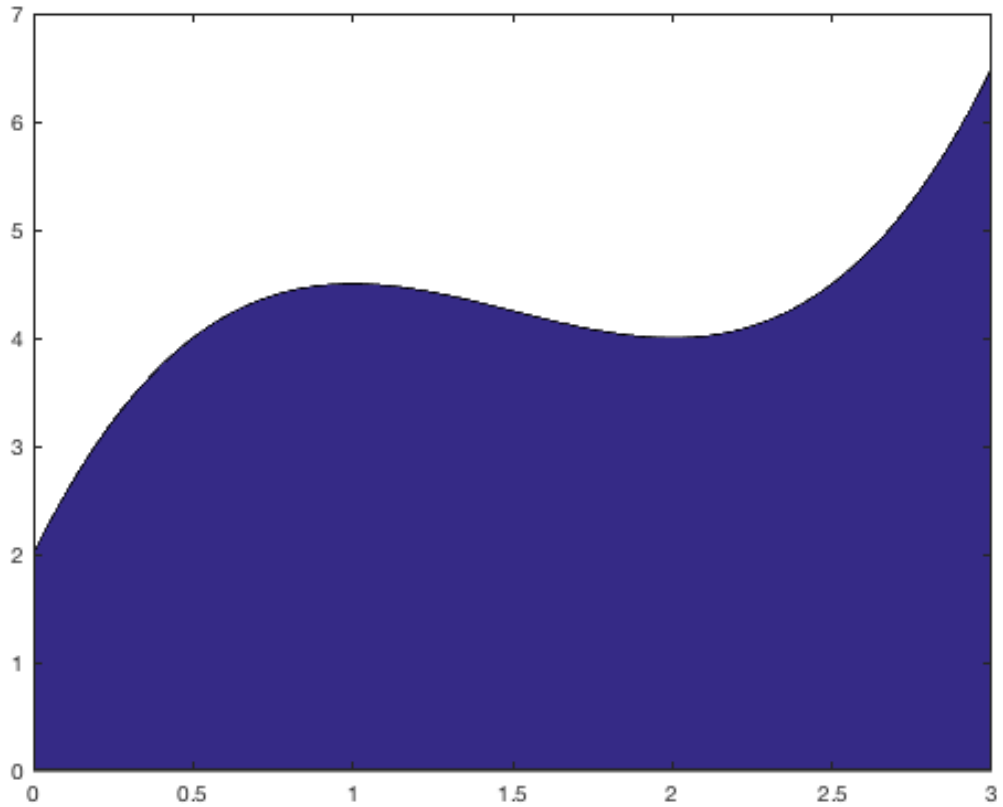


Figure: Area under graph of $y = x^3 - 9/2x^2 + 6x + 2$

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in order to truly understand the concepts underlying Calculus, we have to build a solid technical foundation.

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- Differentation rules (product rule, chain rule etc) and techniques (implicit and logarithmic differentiation).
- Applications of differentiation (Newton's method, Linearization and prediction, Related Rates etc)
- Optimization and Curve Sketching.
- Sums, Areas and the definition of the Integral.
- Fundamental Theorem of Calculus and Applications.
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The goal is to be proficient with the above material, and proficient at using these techniques to solve problems.

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- This slideshow, the syllabus and some useful links available on my website (`danielmckenzie.github.io`)

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- Form a study group.

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- Follow the instructions on in-class assignments. If it is an individual assignment do not look at your neighbours work!

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