

# Math 140 - Test #2 Study Guide

Fall 2016, Prof. Beydler

## Test #2

- Date: Wednesday, October 26, 2016
- Will cover sections 3.1-3.5, 4.3, 4.4.
- You'll have the entire class to finish the test.
- No notes or books during the test. For this test, you'll need a **scientific calculator**.
- Please visit my office hours if you need help. If you don't understand something, don't be embarrassed to stop by—I'm very patient. If you can't make it to my office hours, then feel free to e-mail me with any questions: [dbeydler@mtsac.edu](mailto:dbeydler@mtsac.edu) Also, don't forget to visit the TMARC and get extra credit for doing so! (see syllabus for details)

## Some of the stuff on the test:

- Use the first derivative to find intervals of increase and decrease, as well as relative max/mins. (3.1)
- Use the second derivative to find concavity and inflection points. (3.2)
- Know how the Second Derivative Test works for determining relative maxs/mins. (3.2)
- Find vertical/horizontal asymptotes. (3.3)
- Use calculus to sketch curves. (3.3)
- Know how to find the absolute max/min of a function (if closed interval, test endpoints; if not closed interval and only one critical number, use Second Derivative Test for Absolute Extrema). (3.4)
- There will be an optimization problem from 3.5.
- Know how to take derivatives of functions that have exponentials and logarithms in them. Also know how to use logarithmic differentiation. (4.3)
- Know how to graph functions with exponentials. (4.4)

## Extra Credit!

- If you write up the answers to all of the review exercises listed below, and hand them in at the test, you can earn up to 3% extra credit towards your test (depending on neatness and completeness)! These review exercises don't cover everything. Also, some of the exercises are tough, but hey, you've got to work for your extra credit! 😊
- Review exercises:
  - Chapter 3: p.287 #1-9 odd, 21-27 odd, 31
  - Chapter 4: p.364 #15-27 odd, 31, 33