Final MTH-202, Fall 2017 (practice problems)

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The page and exercise numbers refer to the **Third** Edition of "Calculus. Concepts and Contexts." by Stewart

1. Related rate problems: page 267, #3, 4, 9,13.
2. Optimization problems: page 311, #5,6,7,8
3. Analyze given function: answer the following questions
   a) Find the intervals of increase or decrease
   b) Find the local maximum and minimum values
   c) Find the intervals of concavity and the inflection points
   d) Find x- and y-intercepts
   e) Use the information from parts a) – d) to sketch the graph.

   Page 287, #7,8,19,21
4. Use l'Holpital's rule to evaluate the limits: page 303, #5,7,13,25,27
5. Find the linear approximation of the function and use it to approximate the given numbers: page 252, #9,10.
6. Differentiate given functions (product rule, quotient rule, chain rule: page 255, # 2, 4, 5,9, 11, 19, 23.
7. Use implicit differentiation to find the equation of the tangent line to the given curve at the given point: page 238-239, # 21,22.
8. Find the antiderivative of the function: page 332, # 1,3,5,7,9.
9. Define the derivative of a function, list 2 interpretations of the derivative, give examples when derivative does not exist. Use definition of the derivative to find the derivative of $f(x)=2x+3$