Review sheet for 2nd midterm:

There are several main topics which you should be prepared for; the exam covers 3.6-3.10, 4.1-4.7, 2.8-2.9 as follows.

3.8 implicit differentiation

* 3.9 related rates (uses 3.8)

3.6 & 3.10 Leibniz notation ($\frac{dy}{dx}$, Δy, Δx), differentials (dy, dx), linear approximation.

* 4.1 & 4.4 & 4.5 max-min problems

- 4.1 critical points
- 4.2 max & min values
- 4.3 local extrema
  - 1st & 2nd deriv tests
- 4.1 when are you guaranteed that max & min values exist, and where?

* 4.6 advanced graphing

- 2.8-2.9 asymptotes
- 4.2 INC, DEC, CU, CD
  - inflection pts
- 4.3 local extrema

4.7 Mean value theorem

All topics are likely. Ones with * are extremely likely.
Of course, ideas we have covered earlier (e.g. differentiation rules) will also play an important role in the second exam, as necessary tools for the new topics.

Exam is closed book & note. Scientific calculators only (not graphing!)
I will provide you with geometry & trig identities from back cover.

Practice Exam questions:

- all T/F concept questions in chapter reviews
- p157-158 37, 40, 41, 45d, 46, 47, 50, 51
- p203-204 8, 20, 21, 22, 29, 38, 40, 42, 43, 44, 45
  - p196 #17 (diag asymptote).