Math 104 90A[1] November 29th,1999 Final Review Sheet
http://www.math.ubc.ca/~ athreya/104

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1. **Final Exam Instructions**
   (a) Check the date,time and room number for the exam.
   (b) Final Exam will be closed book.
   (c) A standard sheet of notes and formulas is allowed. You may write on both sides.
   (d) Calculators are allowed.
   (e) Please show your work in the exam. Indicate your answers clearly. Make sure that your do not write erroneous statements.
   (f) Maximum available time will be two hours and thirty minutes.

2. **Syllabus for the final**:.1 to 4.3, 5.1 to 5.4, 8.1 to 8.2, 11.1 to 11.4, 12.1 to 12.6, 13.1 to 13.3, 14.1 to 14.5, and 15.1 to 15.4 of the text book, plus the supplementary material on trigonometric functions and Taylor polynomials and series (3.7,8.2,11.4).

3. **Some key concepts**
   (a) Slope of a line, Equation of Line.
   (b) Quadratic function, Vertex.
   (c) Derivative of a function f, Slope of a curve.
   (d) Rules of differentiation.
   (e) Relative change, percentage change.
   (f) Total cost, Average Cost, Marginal Cost.
   (g) Revenue, Marginal Revenue, Marginal Revenue Product.
   (h) Marginal propensity to consume, Marginal Propensity to save.
   (i) Average Velocity, instantaneous velocity.
   (j) Compound interest, amount along fixed periods, continuous compounding.
   (k) Effective rate of interest.
   (l) Present value, Net present value, equation of value, cash flows.
   (m) Radioactive decay and growth.
   (n) Derivative of $\ln x, e^x, b^x, \log_b(x)$.
   (o) Derivative of $\sin x, \cos x, \tan x$.
   (p) Derivative of $\sin^{-1}(x), \cos^{-1}(x), \tan^{-1}(x)$.

[1] **Office hours:** Monday: 1:45-3:15pm, Tuesday:3:30-4:30pm, Wednesday 10:30-11:30am,2:15-3:15pm

(q) Implicit differentiation.

(r) Critical points.

(s) Steps for finding relative extrema.

(t) Assymptotes, Regions of increase/decrease, concavity.

(u) Steps for finding absolute extrema of functions.

(v) Applied maxima and minima.

(w) Differential of a function.

(x) Point elastiticity of demand, Regions of inelasticity.

(y) Linear, quadratic approximation.

4. **Studying**It would be a good idea to go through the Home-works, Worksheets, Quizzes, the Examples solved in the text-book or in class. Review all the key concepts, their definitions and siginificance.

5. **Office hours for next week** I will be holding the same office hours as usual for next week also.

6. **Review On Wednesday** Please bring all Quizzes, Worksheets, Triterms and Homework (if you have written any up) to the class. We will go over all possible "types" of questions over the key concepts.

7. **Sample Exam Booklets with solutions** Are on sale for $5 at the Discount Bookstore located in the University Village. During the week of November 29th, from Monday to Thursday, the booklets will be available for purchase between 6:30-7pm on the ground floor of the Buchanan building, blocks B and D. The booklet contains a sample final, three former finals and solutions.

8. **Math-club exam** The math-club located in the Math Annex is also selling some sample exams.