**Math X11A Final Exam**

The exam is closed book, with no notes. About 20 problems. You can only use scientific, non-graphing, nonprogrammable calculators., though it's not required or needed.   
  
These are the key concepts to review:

Because of the importance of limits in calculus there will be problems involving basic limits. You will also be asked to find the equation of a line satisfying given conditions. There are derivative calculations which require that you know all basic derivatives, as well as all the trig derivatives, ln x, and inverse derivatives, and be able to use the product, power and quotient rules. Remember to use log properties before finding a derivative when possible. You also need to know implicit differentiation.  There is a graphing problem (with questions), one max-min word problem, one related rate problem, one integration involving area and another involving volume and one exponential growth problem. There are integration problems involving basic forms. Also know how to interpret the graph of a derivative.  
  
For the large part, the problems on the final will closely mirror these problems. You have up to three hours for the final but may not need that much time.   
  
P 100 Example 9

p. 148 3, 11 (no need for graphing calculator part)

p. 161 1, 2

P 165-166   6, 11, 13, 16

P 18-181  3-32, 57

p. 188 3-26

p. 196 1-16  
  
P 204   16, 17, 18, also  (sin 2x)^4  +  (cos 4x)^3

P 215-216   5-20, 51  
  
P 223  11, 13  [use log properties first], 43, 45  
  
P 242 3

P 249   11, 14

P 264   28, also y = e^(cx)[c sin x - cos x]  
  
P 301-302 9, 11, 34, 35

P 337   14, 15  
  
P 408-409   3, 5, 13, 21, 22, 23, 27, 67  
  
P 418 -419 11-16

P 422   7-8, 11, 13  
  
P 434  2, 9, 15

P 446   4, 7 (replace y = x^3  with  y = x^2)