Use the following list of questions as a quide in your review of material of Math 9A: Extra office hours: Monday Dec. 8, Guan:10–11.30am; Luu:11.30–12.30am.

- *The exam is on Monday, 12/08, 3:00 pm – 6:00 pm.*
- *In the exam, you have to show every step of your calculation.*
- *A cheating will cause a serious consequence even for your whole life.*

(1) What is the limit? What is an one side limit?
(2) What is an infinite limit?
(3) What is a continuous function?
(4) What is the derivative?
(5) What is the product rule? What is the quotient rule?
(6) What is a differentiable function? What is the differential of a function?
(7) What is a tangent line? What is the slope of the tangent line?
(8) What is the power rule? What is the chain rule?
(9) What is an implicit function? What is an implicit differentiation?
(10) What is the second order derivative? What are the higher order derivatives?
(11) What is a local maximum and minimum? What is a critical point?
(12) What are the absolute extrema?
(13) What is the first derivative test? What is the second derivative test?
(14) What is the position function, the velocity function and the acceleration function?
(15) What is the graph of a function? What is a symmetry of the graph?
(16) What is an inflection point?
(17) What are the intercepts?
(18) What are the domain and the range of a function?
(19) What is the Lagrange mean value theorem? What is the Rolle theorem?
(20) What is the Newton's method?
(21) What are the limits at infinity?
(22) What are asymptotes? What is a vertical, horizontal or slant asymptote?
(23) What are the monotony and the concavity of a function?
(24) How do you sketch a graph?
(25) What is a linear estimate? What is an error estimate?
(26) What are the antiderivative and indefinite integral?
(27) What are the general solution and the special solution of a differential equation?
(28) What is area?
(29) What is the sigma notation? What are the upper and lower sums?
(30) What is a substitution? What is a change of variable for indefinite integral?

Review Problems:

§**1.3:** 17, 19, 21, 27, 29, 57, 59, 69, 71. §**1.4:** 7, 9, 11, 38, 40, 42. §**1.5:** 10, 12, 14. §**2.1:** 6, 8, 10. §**2.2:** 5, 7, 9, 21, 23. §**2.3:** 2, 4, 6, 7, 9, 11, 83, 90, 103. §**2.4:** 8, 10, 12. §**2.5:** 8, 12, 29.. §**2.6:** 5, 7. §**3.1:** 19, 21. §**3.2:** 9, 11, 31, 33. §**3.3:** 12, 16. §**3.4:** 11, 13, 35, 37, 39. §**3.5:** 15, 16. §**3.6:** 12, 14, 16. §**3.7:** 20. §**3.8:** 5, 7. §**3.9:** 13, 15, 44, 45, 47. §**4.1:** 21, 37, 39, 56. §**4.2:** 3, 17, 19, 41, 54. §**4.5:** 14, 16, 45, 61.