

Use the following list of questions as a guide in your review of material of Math 10A:

- *The exam is on Saturday, 12/13, 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 partial derivative?
- (2) What is a continuous function?
- (3) What is the inner product? What is the length of a vector?
- (4) What is a differentiable function?
- (5) What is a tangent plane?
- (6) What is a derivative matrix?
- (7) What is chain rule?
- (8) What are gradients and directional derivatives?
- (9) What is an implicit function?
- (10) What are second order partial derivatives?
- (11) What is a Taylor series?
- (12) What is a maxima and minima? What is a critical point?
- (13) What is a 2×2 determinant?
- (14) What is the second derivative test?
- (15) What is a constrained extrema?
- (16) What is the Lagrange multiplier? What is a constrained critical point?
- (17) What is acceleration?
- (18) What is a 3×3 determinant? What is the cross product?
- (19) What is the arc length of a curve??
- (20) What is a vector field?
- (21) What is the divergence?
- (22) What is the curl?
- (23) What is the Laplace?

Review Problems:

§2.2: 19, 20, 21, 25, 26, 31, 33, 34. §2.3: 2, 4, 6, 8, 13, 15, 18, 20. §2.4: 10, 12, 14, 16, 18. §2.5: 2, 4, 6, 8, 18, 20, 22, 24, 30, 32, 34, 36. §2.6: 2, 4, 6, 8, 10, 12. §3.1: 1, 3. §3.2: 1, 3, 5. §3.3: 2, 4, 6, 8. §3.4: 2, 4, 6, 8, 10, 12, 14, 16, 18. §3.5: 2, 4, 6, 8, 10, 12. §4.1: 2, 4, 6, 8. §4.2: 2, 4, 6. §4.3: 14, 16. §4.4: 2, 4, 14, 16, 25.