

Review for Final exam

Final Exam: December 14, 8:00am-10:00am. Open book exam
Extra office hour: December 12, 13, 12:30-2:30pm

Section 1-1 to Section 2-4: see "Review for Midterm.

On Regular surface (Chapter 2).

The first fundamental form: Definition, meaning and application in finding *area*, *angle*, *etc.*

Exercise 1: (Question 9 on page 100). Show that a surface of revolution can always be parameterized so that

$$E = E(v), \quad F = 0, \quad G = 1.$$

Exercise 2: Question 11 and 14 on page 101. Recall details of solutions were given in class.

On Gauss map (Chapter 3).

Gauss map and second fundamental form: Normal vector, Normal curvature, second fundamental form, Euler formula for computing the normal curvature, various points (including umbilical point).

Exercise 3: Question 3, question 5, question 8 and 9 part a) on page 151.

Computation in local coordinate: The way to obtain the equations of Weingarten, to compute the Gaussian and Mean curvatures of certain surfaces.

Exercise 4: Question 6 on page 168. Gaussian curvature of a pseudosphere.

WARNING: YOU ARE RESPONSIBLE FOR CHECKING OUT MY TYPOS!

Comments and question to: mzhu@math.ou.edu

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