

MATH 242 MIDTERM 2 STUDY GUIDE

How to prepare for this exam:

1. Look over all of your old homework. Make sure that what you wrote down still makes sense.
2. Redo all of your quizzes. Even if you did them perfectly, redoing them will remind you about the different types of problems.
3. Read over your notes. There are many subtleties that are important to understand. Once you understand these then you understand the material much better.
4. Look over the Review section at the end of chapters 14 and 15.

Format for the midterm: **Multiple choice** (please bring pencil #2).

You will not be able to use your notes, or book on the exam. You can use one note card 3×5 inches with any formulas you wish.

Review questions:

- Page 1031: 15, 16, 17, 19, 21, 22, 27-30;
- Page 1098: 1, 2, 3, 4.
- Assigned homework exercises

Vocabulary:

- average of a function
- moving average by (by n units)
- differential equation
- simple differential equations
- separable differential equations
- general and particular solutions of differential equations
- function in two or three variables
- linear and interaction function in two or three variables
- distance function
- $3D$ space and graph of function in two variables
- level curves and cross sections

1. CHAPTER 14

Sections 14.3, 14.6. Here are some things you should know:

- You should know how to find both the average of a function and the moving average of a function.
- You should be able to find general and particular solutions to separable differential equations.

2. CHAPTER 15

Sections 15.1, 15.2. Here are some things you should know:

- You should be comfortable with functions in several variables, and be able to recognize linear and interaction functions.
- You should be familiar with the distance function.
- You should be able to plot points in the $3D$ space.
- You should be able to analyze the graph of a function in two variables by means of cross sections parallel to X , Y , and Z axes.