MATH 25 **FINAL REVIEW** **September 28, 2016**

The final exam will be **cumulative**, this includes all the material from the course. There will be **(2)** questions from Chapters 2,3 and 4, **(1)** questions from Chapters 5 and 6, and **(7)** questions from Chapters 7 and 8. You are responsible for knowing the examples covered in lecture and the problems assigned in the homework. The topics and skills you **MUST** know include:

- Graphing - There **WILL** be at least 1 graph on the final exam. You must know how to graph the following types of functions: polynomials (degree 2 or higher, including multiplicities, end behavior, etc.), exponential functions, and logarithmic functions.
- Solving exponential and logarithmic equations - You must know your exponential and logarithm rules to solve these questions. You can be asked to solve equations directly for the variable, or asked to combine/reduce logarithms. Look at the examples from class. Remember to **ALWAYS** check your answers, as logarithm is **NOT DEFINED** for negative numbers.
- Systems of Equations - Recall we have many ways to solve these in 2 or 3 variables: Substitution, elimination, Gaussian elimination, Gauss-Jordan elimination, matrix inversion, and Cramer's Rule. You may or may not be asked to solve them a specific way, but this does not stop you from checking your answer via another method.
- Circles, Ellipses, Hyperbolas, Parabolas - You **WILL** have to know how to complete the square **AND** know the general form of all these conic sections. This **WILL** show up and there are plenty of homework and lecture examples to prepare you for these questions. There will be **(2)** questions on conic sections.
- Proof Question - There will be one induction proof on the test from §8.4. You will have seen the proof that shows up on the test before, so there is no need to panic if you are afraid of proof questions. It will either be a lecture proof I presented in class, or one from your homework. This question should not be a surprise.
- There will be a one question on the test that you have never seen before and is not quite like what was in the homework. The material required to answer the question is covered in lecture and in the homework. The question is designed to make you think and recall what we have learned. It will be one of the questions cover Chapter 8 material.

ADVICE: For the final exam, I **HIGHLY RECOMMEND** that you work through problems that I have gone over in lecture similar to what you see in the practice final. I have presented a variety of different flavors of problems in the lecture. The homework should also guide you in studying for the final. If you know the lecture examples and homework questions, the test questions should be familiar. Remember that you can only choose one problem for extra credit, so you **NEED** to study for the test. You should choose your extra credit problem to be the one you are **WEAKEST** on, so that you maximize the points you get on the test.

I will be posting a practice final online as well, just as I have done for the midterms. Formulas that may be helpful will be on the front page, just as on the practice final. Any formulas that are not on here you will have to know. The practice exam should be a **GUIDE** for what to expect on the exam. For the final, there will be questions slightly harder than the practice exam, and ones that are the same level. Take your time on the test! There is 2 hours and 15 minutes, you should carefully check your answers, and use the checks that we have gone over in class to make sure your answer is right.

GRADING: Grading will be more strict for the final. **ANSWERS MUST BE COMPLETELY SIMPLIFIED** in order to receive full credit! Please clearly mark you final answer! If I cannot follow the work you are doing and the writing is all over the place, I assume that you do not know how to do the question. Non-sense answers will receive a score of a "0" for the problem.