Purpose: This assignment will demonstrate your familiarity and understanding of the learning objectives leading up to this assessment. In a broader context, this assignment provides an example of synthesizing information provided to you into something you can use to achieve your goals.

Skills:

- Organization
- Preparing for an exam
- Mathematical communication
- Self-assessment of the content
- Drawing connections between content
- Implementing feedback received on graded and ungraded work to improve your understanding of the material
- Consolidating and synthesizing your homework, notes, and other course materials in order to help prepare for your exam

Knowledge: See last page for learning objectives needed to accomplish this assignment.

Task: Create a study tool to review and synthesize material and concepts in preparation for the upcoming exam.

Requirements:

- Must cover all sections on the exam split into a minimum of 6 sections. It is recommended to divide up by the sections covered in the textbook but any division of topics is acceptable.
- For each topic, provide all relevant definitions, formulas, and theorems (a good place to start would be covering all words that are explicitly defined in the section). For each of these, provide a (minimum) one sentence explanation in your own words.
- For each topic, a (minimum) two sentence summary about what the section is about in your own words.
- For each topic, provide at least two complete worked examples.
- For each topic, provide at least one mistake you are prone to making on the exam. Describe a strategy to avoid it.
- Do not be limited by this list!

Suggested structure:

- Booklet (or booklets)
- Notecards that are connected
- "Cheat Sheets" in sheet protectors

Criteria for Success: A successful tool will be legible, organized, distinct from course notes, and meet all requirements. Such a tool should aid in your exam preparation. This tool should demonstrate connections between different sections of content. Glancing at each topic, a peer in the class should understand and recognize the content. Reading through each topic, a peer who hasnt taken this class, should be able to get a sense of the goal of the content. This tool will be graded based on meeting all of the requirements above. It will be factored into your final grade as a standalone assignment.

You must earn a satisfactory grade on all study tools and exam reflections in order to qualify for grade replacement with the final exam. You can resubmit your study tool with the exam reflection to earn a satisfactory grade by implementing the feedback given.

Grading will be out of three points:

0: Not turned in

1: Turned in, several requirements not met and some not attempted

2: Turned in, most requirements met, all attempted

3: Turned in, all requirements met

Knowledge:

- Analyze, solve, and estimate solutions to absolute value equations.
- Solve absolute value inequalities.
- Graph absolute value functions.
- Determine an appropriate approach to and solve absolute value application problems and then interpret the solution.
- Analyze, solve, and estimate solutions to polynomial and rational equations.
- Determine the equations of polynomial and rational functions algebraically given sufficient information.
- Solve polynomial and rational inequalities
- Determine domain and range of polynomial and rational functions and use these to determine appropriate graphing window size.
- Determine the properties of polynomial and rational functions such as degree, maximum number of zeros, maximum number of turns, multiplicity of zeros, vertical asymptotes, horizontal asymptotes, and long-run behavior.
- Graph polynomial and rational functions.
- Graph polynomial and rational functions on a calculator, determine appropriate graphing windows, and use the graphs to estimate extrema.
- Determine an appropriate approach, solve polynomial and rational application problems, and then interpret the solution.