Math 1060–003, Fall 2013
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Midterm Exam #2 Review

This document gives an overview of the upcoming exam, some review problems, and a review of the topics we have discussed since the previous exam. If you have any questions after reading through this document, please let me know.

1 Overview

- The exam should be similar in format and directions to the first exam.
- The exam will cover part of Section 4.1 and all of Sections 4.5–4.8, 5.1.
- Be sure that you understand all of the problems from the homeworks and quizzes; similar problems may reappear on the exam.
- Additional review problems can be found at the end of each chapter. In particular, page 342 #15–18, 65–67, 71–74, 77–80, 87–90, 91–92, 93–96, and page 393 #1–15, 19–25.
- You will not be allowed to use a calculator on the exam.
- You will be in an assigned seat to take the exam.

2 Review

1. Section 4.1
   - Length of the arc of a circle
   - Linear and angular speed
   - Area of the sector a circle
2. Sections 4.5 and 4.6
   - Graphing a trigonometric function (with transformations)
   - Given the graph of a trigonometric function, describe the transformations, and write down the function corresponding to the graph
3. Section 4.7
   - Definition of inverse trigonometric functions, including domain and range
   - Graphing an inverse trigonometric function

- Evaluating expressions involving inverse trigonometric functions
- Evaluating expressions involving the composition of functions, e.g., $\tan(\arccos 2/3)$ (this is just one example)
- Applications involving inverse trigonometric functions

4. Section 4.8

   - Solve for parts of a right triangle given two pieces of information (possibly in a word problem/application)
   - Solve problems involving angle of elevation/depression
   - Solve problems involving the bearing of a plane or a person/boat
   - Solve problems involving simple harmonic motion

5. Section 5.1

   - Simplify trigonometric expressions involving identities (e.g. cofunction, even/odd, Pythagorean, quotient, and reciprocal identities)
   - Factor a trigonometric expression
   - Verify trigonometric identities