Final Exam Review

This exam covers sections 6.1-6.6, 7.2, 7.3, 7.5, and 8.1-8.4 in your textbook, as well as all material from our quizzes, projects, and other in-class work. You should be able to do the following (associated textbook sections and assignments are listed in parentheses).

- Convert between angle measurements in degrees and radians. *(6.1)*
- Identify the standard angles. *(Identifying the Standard Angles Activity: Part 1, Quiz A)*
- Given an angle in degrees or radians, find one or more coterminal angles. *(6.1)*
- Find all six trig functions of any angle that either has its terminal side on an axis or has a reference angle of 30, 45, or 60 degrees. *(6.3, 7.2, Identifying the Standard Angles Activity: Part 2, Group Work 1, Quiz B)*
- Find the reference angle for any angle in degrees or radians. *(6.3, 7.2, Group Work 1)*
- Given a central angle of a circle, find the arc length that subtends it, or the area of the sector it encloses. You'll be given the formulas. *(6.1)*
- Given two sides of a triangle and the angle between them, find the triangle's area. You'll be given the formula. *(6.3)*
- Given the sine, cosine, secant, or cosecant of an angle, as well as its quadrant (or enough information to figure out its quadrant), find the other five trig functions of the angle. *(6.3, 7.2)*
- Identify the period, domain, and range of the functions $y = \sin x$, $y = \cos x$, and $y = \tan x$. *(7.3, Project 1, Project 2, Quiz C)*
- Identify the period, amplitude, and phase shift of a sine or cosine function, and graph one or two periods of the function. The 5 key points for each period should be clearly plotted. *(7.3, Group Work 2)*
- Find a possible sine or cosine equation for a given graph. *(7.3)*
- Given two pieces of information about a right triangle (side lengths and/or acute angle measures), solve the triangle. *(6.2, 6.4, Right Triangle Trig activity)*
- Solve application problems dealing with angles of depression or elevation using right triangle trigonometry. *(6.2)*
- Know the domain and range of the inverse trig functions, and calculate either exact or approximate values of those functions. *(6.4, 7.5)*
- Use the Law of Sines to solve an ASA, SAA, or SSA triangle, possibly for an application. *(6.5, Group Work 3)*
- Identify whether an SSA triangle problem has 0, 1, or 2 solutions. *(6.5)*
- Use the Law of Cosines to solve an SAS or SSS triangle, possibly for an application. *(6.6)*
- Simplify trig expression or verify trig identities using the fundamental identities and algebra. *(8.1, Group Work 3, Quiz D)*
- Use the addition, subtraction, double-angle, or half-angle formulas to calculate the exact values of trig functions of non-standard angles or expressions involving such functions. *(8.2, 8.3)*
- Given one trig function of an angle as well as its quadrant (or enough information to figure out its quadrant), find the sine, cosine, or tangent of half or double the angle.
- Solve simple or factorable trig equations. *(8.4)*
- Find values of composites of inverse and ordinary trig functions. *(7.5)*

The reference sheet for the final exam is available on the class website.

For extra practice, try the following problems from the Chapter Reviews and Tests in your textbook. All of the solutions can be found in the appendix at the end of the book. This is true for both the eText and paper version. Most of the Chapter 6 and 7 problems are from previous exam reviews.

Chapter 6 Review (pg. 457):   1, 3, 5, 11, 17, 19, 21, 23, 29, 31, 33, 35, 39, 53, 59, 67, 69, 71, 73, 75, 77, 79, 81
Chapter 6 Test (pg. 461):   1, 2, 4, 5, 8, 10, 13, 14, 15, 16, 17, 18, 20, 21
Chapter 7 Review (pg. 522):   3, 5, 7, 11, 13, 15, 23, 29, 33, 35, 37, 39, 49, 51
Chapter 7 Test (pg. 524):   2, 3, 6, 7, 10, 11
Chapter 8 Review (pg. 568):   1, 5, 9, 31, 33, 35, 51, 53, 55, 57, 65
Chapter 8 Test (pg. 570):   1ab, 3, 4, 6, 7abc
Cumulative Review (pg. 576):   1, 2, 3, 4, 5, 6, 8, 9a, 11ab