Unit 1

Unit 1 begins with a discussion of angles and various ways to measure angles: radians, decimal degrees, and degrees-minutes-seconds. Then the trigonometric functions are defined in terms of the unit circle, rather than in terms of right triangles (which you may have seen before). The connection with right triangles will appear in Unit 2.

It is Math Department policy that students should be able to compute the exact values of all the trigonometric functions at the "standard" angles, i.e., all multiples of pi/6 and pi/4 radians and 30 and 45 degrees. Therefore, no calculators will be allowed on the Unit 1 Exam.

- Angles and their Measure (6.1)
    - Radians
    - (Decimal) degrees
    - Degrees-minutes-seconds
    - Conversions between radians and degrees for standard angles (all multiples of pi/6 and pi/4 radians and 30 and 45 degrees)
- The Trigonometric Functions: sine, cosine, tangent, cotangent, secant, cosecant (6.2-3)
    - Exact values for particular real numbers (angles)
    - Evaluation of trigonometric functions using a circle
    - Basic properties and identities
    - Solving "inverse" problems: given the value of a trig function, what is the corresponding angle?

Study Guidelines for the 8th edition of Sullivan's *Precalculus*

The only way to learn mathematics is to do mathematics, so while these problems will not be collected or graded, you will probably not do well in the course if you do not complete these and check your work as described above.

Section 6.1: Angles and Their Measure

- **Section 6.2:** Trigonometric Functions: Unit Circle Approach
    - You can [download a copy of the unit circle](#) with the values of sin and cos for the standard angles.
- **Section 6.3:** Properties of the Trigonometric Functions