

# Unit 6

## Topics

This unit consists of two parts. The first part finishes the study of trigonometric identities begun in Unit 5. In this section you will use the various trigonometric identities to help solve equations involving trigonometric functions. The second part is a study of methods for solving general triangles, using the Law of Sines and the Law of Cosines. Included are many different applications, along with a short section on two new formulas for the area of a triangle.

- Finding exact and/or approximate solutions to trigonometric equations using an algebraic approach. (7.7-8)
- Finding approximate solutions of trigonometric equations using a graphical approach. (7.7-8)
- Solving triangles using the Law of Sines (8.2)
- Solving triangles using the Law of Cosines (8.3)
- Applications of the Laws of Sines and Cosines (8.2 & 8.3)
- Formulas for the area of a triangle (8.4)

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

The only way to learn mathematics is to do mathematics.

### Section 7.7: Trigonometric Equations (I)

- **Reading:** section 7.7  
Read and work through examples 1-6 and their matched problems.
- **Practice Problems:** 7.7 #1, 2, 7-51 odds, 66, 67, 71
- **Section 7.8:** Trigonometric Equations (II)
  - **Reading:** section 7.8  
Read and work through examples 1-8 and their matched problems.
  - **Practice Problems:** 7.8 #1-4, 5, 7, 9, 13, 15, 19, 23, 27, 35, 39, 41, 43, 45, 47, 49, 51, 53, 57, 63, 65, 69
- **Section 8.2:** Law of Sines
  - **Reading:** section 8.2  
Read and work through examples 1-7 and their matched problems.
  - Try out the [Law of Sines SSA](#) applet. You can experiment with the construction to see how to get 0, 1, or 2 solutions in the SSA case.
  - **Practice Problems:** 8.2 #1, 2, 3, 9, 11, 15, 17, 21-47 odds, 51, 53
- **Section 8.3:** Law of Cosines
  - **Reading:** section 8.3  
Read and work through examples 1-3 and their matched problems.
  - **Practice Problems:** 8.3 #1, 2, 9, 11, 13, 15, 17, 21, 25, 29, 33-45 odds
- **Section 8.4:** The Area of a Triangle
  - **Reading:** section 8.4  
Read and work through examples 1-2 and their matched problems.
  - **Practice Problems:** 8.4 #1, 5, 7, 9, 11, 13, 17, 19, 23