# Reference Material

## A Procedure for Writing Proofs

1. Begin by reading the conjecture to make sure you understand it.

Make sure this conjecture isn’t the same as some other result that has already been proven.

1. Draw a figure that illustrates what is to be proven.

The figure may have already been drawn for you. If so, verify that it accurately reflects the conjecture. If not, draw it yourself. Include labels for the key components (such as lines, angles, and vertices) of the drawing.

1. List the given statements, and then list the conclusion to be proven.

If the statement is a conditional statement, use the hypothesis for the “Given” and the conclusion for the “Prove.” If it is not a conditional statement, rewrite it as one. Now you have a beginning and an end to the proof.

1. Mark the figure according to what you can conclude about it from the information that is given.

This is where you figure out whether you are able to prove the conjecture, and how to structure the proof. Mark up the figure with as much information as possible, and use it to see what you’ll need to write in your proof.

1. Write your steps carefully—even the simplest ones.

Consecutively number each step in the left-hand column. Some of the first steps are often (but not always) the given statements. Each statement must follow logically from the previous steps, and the last step is the conclusion that you’ve proven. Remember, you need to convince the reader that your conclusion is valid and accurate.