

How to Study Geometry

Textbook:

1. Read the textbook word for word.
2. Pay special attention to undefined terms and definitions. The topics of the textbook that follow build upon this terminology.
3. When you encounter a definition:
 - a. Make a drawing (to reinforce the concept).
 - b. Think of other examples and counter-examples (things that do *not* meet the description) to compare with the defined term.
 - c. State the definition in your own words (Do not just memorize a cluster of words).
4. When you encounter a postulate or theorem:
 - a. Read and reread until you understand the statement.
 - b. Make a drawing to illustrate the statement.
 - c. Ask if the meaning would change if words were added or deleted.
 - d. State the postulate or theorem in your own words.
 - e. For a given theorem, ask yourself if the statement makes sense. Why should it be true?

NOTE: The student should create an index card for each important term, postulate, or theorem. On the card, write the statement (the definition, postulate, or theorem), illustrate with a drawing, and include an example.

5. When you encounter a textbook example:
 - a. Read it step for step, justifying each step as it unfolds.
 - b. Refer to the drawings that are provided in arriving at each conclusion.
 - c. Try repeating the steps of the example with the book closed.
6. When you encounter a completed proof (like an example):
 - a. Note the ordering of “statements” and the justifying “reasons.”
 - b. Reason from the given information using the drawings that are provided.
 - c. Consider the statements *in reverse order* noting that each statement is true because it follows logically from a statement that precedes it.
 - d. Try repeating the steps with the book closed.
7. It is good to keep track of the many methods that achieve a particular goal. For example, write a list of methods for proving that *triangles are congruent* or that *lines are parallel*. For reference, see the list of postulates and theorems in the appendix of the textbook.

Assignments:

1. Be sure to complete as many of the assigned problems as possible. One cannot expect to solve problems found on quizzes or tests if one has not practiced by doing assignments beforehand.

If you have a Student's Solutions Manual, you must use it wisely; try the problem first, and then use the manual to help you with a difficult step. DO NOT just read the author's solution; in no way does that guarantee that you the student could generate that solution.

2. If a problem of the assignment seems difficult, try the next one. Unlike a cluster of very similar algebra problems, consecutive geometry problems are often very different. Due to a discovery made in solving a later problem, you can sometimes return to and solve the "difficult" problem.
3. It is important to work on an assignment solo at first. When having difficulty doing an assigned problem, you should look for a textbook example of a similar nature to serve as a guide.
4. When there are difficulties or you are frustrated, it is worthwhile to seek the help of a tutor or of a classmate. You may need to make an appointment to speak to the instructor.

Preparing for a Test:

1. Handwrite a list of the definitions, postulates, and theorems included in the test material. Study the list thoroughly and then try to write each statement in your own words.
2. Study the chapter summaries and attempt chapter review exercises found at the end of each chapter of the textbook.
3. Repeat the assigned problems, especially those that caused difficulty.
4. If questions remain, consult your instructor, a tutor, or a study partner.
5. Preparation for a test really begins with the first day of class. It may be very important for your success in a course like geometry to form a study group . . . to study with on a regular basis and before tests.

General Behavior:

1. Attend all classes. Arrive on time!
2. Develop an interest. Ask questions in class.
3. Find a study buddy or form a study group that meets regularly.
4. Utilize the instructor's office hours and tutoring services.