

Problem-Guided Reading for Math

PROBLEM-GUIDED READING (PGR) provides an effective system for reading a math textbook. If you tend to read the textbook chapter all the way through before you begin to solve your math problems, try PGR. It will help you read faster and concentrate better.

Follow the PGR steps described below. When you are done, you will have read the entire chapter and completed your homework problems.

Step 1

Decide whether PGR really applies to your situation.

PGR works best if your homework and tests consist mainly of problems.

Step 2

- Classify your homework problems.
- Label those problems that you can solve without referring to text or lecture notes.
- Label those problems that you can solve using information from only your lecture notes.
- Label the remaining problems. These are ones for which you will probably need to consult your textbook.
- Write next to these problems the text section or page that you need to review. Some end-of-chapter problems are already coded, indicating the textbook section to which they relate.

Step 3

Decided which problems to work on first.

- Start with those you already know how to solve, if any.
- Work with one type of problem at a time.
- Work on the easiest problems from the earliest part of the chapter.

Step 4

Start solving the problem.

- Try to solve as much of the problem as you can without consulting any other sources.
- Analyze the problem. Separate it into knowns and unknowns. Note steps you already know to its solution.
- Identify formulas you will probably need.
- Solve as much of the problem as you can before you read the text.
- Try to gain a better understanding of what you need to learn from your reading.
- If possible, indicate what you think the solution should look like. (Perhaps you know it has to be smaller than 1, or between 100 and 200.)

Step 5

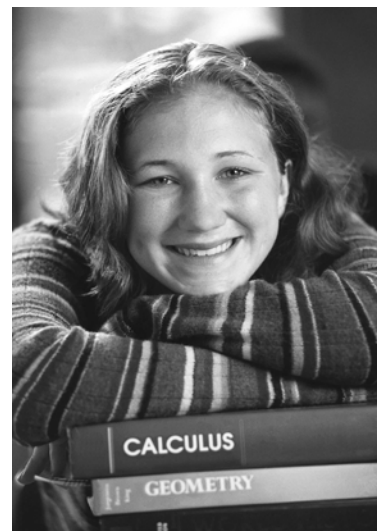
Consult your sources.

- To save time, consult whatever source will help you solve your problem the fastest: sample problems in your lecture notes, sample problems in the textbook, sections of your lecture notes, sections in the text. Whatever you decide to read, you will now be reading with a clear purpose in mind to help you understand the problem you are trying to work.
- To save time, read selectively only the material that will help you solve the problem.
- Switch back and forth from your reading to the problem until you have solved the problem.

Step 6

Go on to the next problem.

- Follow the previous two steps until you have solved the rest of the problems. You will be reading only to solve the first few problems of the same type. After you have solved a few of the same kind, you probably won't need the text.
- When you have solved all of the problems, you will probably find you have read most of the chapter.



Step 7

Review the chapter.

Some textbooks include material not used in solving problems. You will need to decide how much effort you should devote to studying it. If you have already read most of the chapter while solving the problems, you may only need to skim it now to get the total picture.

Step 8

Keep solving problems.

- Since your tests (and perhaps future career) involve problem-solving, spend most of your study time solving problems.
- If you run out of problems, make up your own.
- Solve problems on cards and mix up the cards to determine if you can solve the problems in different contexts.
- Try to understand the problems rather than memorize solutions and formulas.

Source: Johnsen, L. "Problem-Guided Reading for College Math-related Courses." *Journal of Reading* April (1984): 602-6

