

HOW TO STUDY MATHEMATICS

Many people have trouble learning mathematics because they never develop the particular study habits which are conducive to success in mathematics. If you practice the following suggestions, they should prove invaluable to you.

I LISTEN IN CLASS

- A. You must pay careful attention to class discussion in order to know what is going on.
- B. You must participate in class discussion. Try to answer all questions silently even those not directed to you. Keep your mind on what is going on at all times.
- C. Copy assignments in your mathematics notebook. Be sure you understand the assignment.

II READ CAREFULLY AND DELIBERATELY

- A. You must read slowly, absorbing each word.
- B. It is sometimes necessary to read a discussion, or problem, many times before it begins to "make sense" to you.
- C. In reading mathematics each word or symbol is important because there are many thoughts condensed into a few statements.

III THINK WITH PENCIL AND SCRATCH PAPER

- A. Always have pencil in hand and scratch paper ready to use when you read and study mathematics.
- B. Test out the ideas on paper that the authors are discussing.
- C. Try to answer proposed questions before going on.
- D. Work out the illustrative examples for yourself on scratch paper.
- E. If in attempting to solve a problem, you have nothing written on scratch paper, then certainly you have not yet exerted enough effort to justify seeking help.

IV TAKE TIME TO REFLECT

- A. You must take time to do some reflective thinking about material covered during the last few days or weeks.
- B. It takes time for some ideas in mathematics to "soak in."
- C. You may have to live with some ideas and do reflective thinking about them before they become a part of you.

V CONCENTRATE ON FUNDAMENTALS.

- A. Do not try to learn mathematics by memorizing illustrative examples.

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- B. All mathematics is based on a few fundamentals, principles, and definitions. Some of these must be memorized.
- C. Each new topic is just a reapplication of the fundamental principles.

VI **BE INDEPENDENT**

- A. To gain the maximum benefit from your work you must try to complete each assignment without help.
- B. You must ask questions when necessary.
- C. Do not be afraid that your question may sound "dumb." The only "dumb" action is to fail to ask questions about a topic that you have really tried to grasp and still do not understand.

VII **PERSEVERE**

- A. Do not give up if a topic or problem baffles you at first. Stick with it!
- B. If you do not seem to be making any progress after working on a problem for some time, put it aside and attack it again later.
- C. There is a tremendous sense of satisfaction in having been persistent enough and creative enough to solve a problem independently that has given you a great deal of trouble.

VIII **BE NEAT AND ACCURATE**

- A. You must deliberately practice neatness and accuracy before they become a habit.
- B. Keep your work organized.
- C. Keep your homework paper in the same place every day so that you can turn to it immediately. No excuses for not having your homework will be accepted, even though they may be true.

IX **TAKE TIME TO DO YOUR WORK AND DO IT ON TIME**

- A. You must do your homework regularly and make up the work missed when you are absent. No sympathy will be given to anyone failing to do his homework.
- B. If you spend just enough time to get the "answers" and do not take time to get the underlying principles, you will soon become confused.
- C. Learning mathematics is not an activity for the intellectually lazy. It requires a strong steady effort.
- D. Mathematics is not a spectator sport. You must become actively involved. Do not expect to sit idly by and watch your teacher do the work.
- E. There will be no extra compensation given for working hard or

conscientiously doing your homework. This is something you are expected to do as a matter of course. The "reward" you get will be the mathematics that you learn and the satisfying feeling of success!