

# WINNING AT MATH

## HOW TO DO YOUR HOMEWORK

Doing your homework can be frustrating or rewarding. Most students jump right into their homework, become frustrated and stop studying. These students usually go directly to the math problems and start working them without any preparation. When they get stuck on one problem, they flip to the back of the text for the answer. Then, they either try to work the problem backward, to understand the problem steps, or they just copy down the answer.

Other students go to the solution guide and just copy the steps. After getting stuck several times, these students will inevitably quit doing their homework assignment. Their homework becomes a frustrating experience, and they may even quit doing their work altogether.

To improve your homework success and learning, refer to the following 10 steps:

### 10 Steps to Doing Your Homework

**Step 1** - *Review the textbook material that relates to the homework.* A proper review will increase the chances of successfully completing your homework. If you get stuck on a problem, you will have a better chance of remembering the location of similar problems. If you do not review prior to doing your homework, you could get stuck and not know where to find help in the textbook.

**Remember:** To be successful in learning the material and in completing homework assignments, you must first review your textbook.

**Step 2** - *Review your lecture notes that relate to the homework.* If you could not understand the explanation of the textbook on how to complete the homework assignment, then review your notes.

**Remember:** Reviewing your notes will give you a better idea about how to complete your homework assignment.

**Step 3** - *Do your homework as neatly as possible.* Doing your homework neatly has several benefits. When approaching your instructor about problems with your homework, he or she will be able to understand your previous attempts to solve the problem. The instructor will easily locate the mistakes and show you how to correct the steps without having to decipher your handwriting. Another benefit is that, when you review for midterm or final exams, you can quickly relearn the homework material without having to decipher your own writing.

**Remember:** Neatly prepared homework can help you now and in the future.

**Step 4** - *When doing your homework, write down every step of the problem.* Even if you can do the step in your head, write it down anyway. This will increase the amount of homework time, but you are overlearning how to solve problems, which improves your memory. Doing every

step is an easy way to memorize and understand the material. Another advantage is that when you rework the problems you did wrong, it is easy to review each step to find the mistake.

**Remember:** In the long run, doing every step of the homework will save you time and frustration.

**Step 5** - *Understand the reasons for each problem step and check your answers.* Do not get into the bad habit of memorizing how to do problems without knowing the reasons for each step. Many students are smart enough to memorize procedures required to complete a set of homework problems. However, when similar homework problems are presented on a test, the student cannot solve the problems. To avoid this dilemma, keep reminding yourself about the rules, laws, or properties used to solve problems.

*Example: Problem  $2(a+5) = 0$ . What property allows you to change the equation to  $2a + 10 = 0$ ? Answer: The distributive property.*

Once you know the correct reason for going from one step to another in solving a math problem, you can answer any problem requiring that property. Students who simply memorize how to do problems instead of understanding the reasons for correctly working steps will eventually fail their math course.

### **How to Check Your Answers**

Checking your homework answers should be part of your homework duties. Checking your answers can improve your learning and help you prepare for tests.

Check the answers of the problems for which you do not have the solutions. This may be the even-numbered or odd-numbered problems or the problems not answered in the solutions manual.

First, check your answer by estimating the correct answer.

*Example: If you are multiplying 2.234 by 5.102 the answer should be a little over 10. Remember that 2 times 5 is 10.*

You can also check your answers by substituting the answer back into the equation or doing the opposite function required to the question. The more answers you check, the faster you will become. This is very important because increasing your answer checking speed can help you catch more careless errors on future tests.

**Step 6** - *If you do not understand how to do a problem refer to the following points:*

- Point 1 - Review the textbook material that relates to the problem.
- Point 2 - Review the lecture notes that relate to the problem.
- Point 3 - Review any similar problems, diagrams, examples or rules that explain the misunderstood material.
- Point 4 - Refer to another math textbook, solutions guide, math computer program software or video tape to obtain a better understanding of the material.
- Point 5 - Call your study buddy.

- Point 6 - Skip the problem and contact your tutor or math instructor as soon as possible for help.

**Step 7** - *Always finish your homework by successfully completing problems.* Even if you get stuck, go back and successfully complete previous problems before quitting. You want to end your homework assignment with feelings of success.

**Step 8** - *After finishing your homework assignment, recall to yourself or write down the most important learned concepts.* Recalling this information will increase your ability to learn these new concepts. Additional information about Step 8 will be discussed later in this chapter.

**Step 9** - *Make up note cards containing hard-to-remember problems or concepts.* Note cards are an excellent way to review material for a test. More information on the use of note cards as learning tools is presented later in this chapter.

**Step 10** - *Getting behind in math homework is academic suicide.* Math is a sequential learning process. If you get behind, it is difficult to catch up because each topic builds on the next. It would be like going to Spanish class without learning the last set of vocabulary words. The teacher would be talking to you using the new vocabulary, but you would not understand what was being said.

### **Do Not Fall Behind**

To keep up with your homework, it is necessary to complete the homework every school day and even on weekends. Doing your homework one-half hour each day for two days in a row is better than one hour every other day.

If you have to get behind in one of your courses, make sure it is not math. Fall behind in a course that does not have a sequential learning process, such as psychology or history. After using the 10 Steps to Doing Your Homework, you may be able to combine two steps into one. Find your best combination of homework steps and use them.

**Remember:** Getting behind in math homework is the fastest way to fail the course.