Guide for Math Word Problem Solving

Start with a Positive Attitude

Do you begin each problem with an open mind?

Each problem is a new experience. Recognize that experience helps, the more you do the better you'll get.

Survey the Problem.

1. Read and visualize the situation described. Drawing a picture can help.

2. Identify what this problem is asking you to find.

3. Is this problem similar to another problem that you've already worked, or does it look like an example from the text? Is it in your notes?

Read the problem quickly to get a general feel for what you are being asked to find. Don't let yourself get bogged down with details in the very beginning. Reread the problem until you know what it is you are to find. Draw a diagram, chart, or sketch to illustrate the problem, if possible.

Break the Problem into Parts

1. Read the problem slowly and carefully to obtain each fact or idea.

2. List in writing the given or known facts, and unknown facts.

3. Understand the meaning of each word in the problem.

4. Estimate the outcome.

Read the problem slowly and carefully. You may need to read the problem several times to be sure that you have all the facts and ideas. If the wording bothers you, read a phrase at a time and ask yourself, "What does this mean?" Check your notes from class for helpful hints that might help you to understand. Sometimes it helps to express your thoughts out loud. Example: If "the sum of the number is 24", then that means I am going to add in my equation.

Work the Problem One Step at a Time

1. Rewrite the "givens" in a more organized manner.

2. Given diagrams or charts should show all the given information and the unknown parts.

3. Express the unknown in terms of a variable.

4. Write out each step.

An important problem-solving skill is to be able to distinguish facts that you do know from the ones you don't know. If there is a certain equation or formula you must use, write it down. Illustrating this information is very helpful in breaking complex ideas into smaller parts.

Know Where to Look for Help.

1. Have you asked your instructor for some extra help?

2. Is there someone in the class who seems to understand the material who might help you?

3. Have you sought help in the math center or from a tutor?

We all come across problems that we feel we are unable to solve. A very important part of the learning process is to develop skills in figuring things out independently. The most immediate resource is the text, past homework, and class notes. Sometimes, though, it takes another person to shed some light on the topic. Ask your instructor for a hint or two. (Don't ask to have the problem worked for you because that is your job.) You might also check to see if there are students who are willing to work with you. If it is necessary to have someone else work the problem for you, you should later try to rework the problem completely by yourself. This is essential to ensure that you completely understand the concepts.

Check your Results.

1. Did you label your answer?

2. Does your answer seem reasonable?

3. Did you substitute your answer into the original problem, (not the equation)?

Since word problems require quite a bit of time and effort, you might as well be assured that your answers are correct. Do not substitute your answers into the equations unless the equation was already given. If your equation is wrong, then your solutions will also be incorrect. Many times, students will find that $x=5$ but then will not know what the 5 represents. It is essential that you are always aware of what the problem asks you to find.