

## SOLVING WORD PROBLEMS USING ONE VARIABLE.

1. READ THE ENTIRE PROBLEM. (Reread during later steps, as needed.)
2. LOOK FOR A QUESTION OR REQUEST. ("What number", "How many", "Find", etc.)
3. IDENTIFY THE UNKNOWN QUANTITIES WHICH ARE ASKED FOR, AND OTHER UNKNOWN AND KNOWN QUANTITIES. MAKE A DIAGRAM, IF APPROPRIATE.
4. ASSIGN A VARIABLE TO AN UNKNOWN QUANTITY. (Usually one of those asked for.)
5. WRITE EXPRESSIONS FOR THE OTHER QUANTITIES. MAKE A TABLE, IF APPROPRIATE. (It may be necessary to use information other than that given in the problem, such as distance = rate x time, the sum of the angles in a triangle is 180', etc.)
6. WRITE AN EQUATION. (Look for "is", "is equal to", "results in", etc. If you have an expression for a known quantity, set the expression equal to the value of the quantity. If you have two expressions for the same quantity, set them equal.)
7. SOLVE THE EQUATION.
8. EVALUATE ALL THE EXPRESSIONS AND CHECK YOUR SOLUTION TO THE EQUATION. (Check that all conditions stated or implied in the problem are satisfied.)
9. WRITE AN ANSWER TO THE PROBLEM IN THE FORM OF A SENTENCE. (No variables should be used in the sentence answer unless they were given in the statement of the problem. Appropriate units of measurement should be used in the answer.)

### Comments:

Some word problems can be more easily solved without introducing variables.

Sometimes it is necessary or convenient to use more than one variable. (Generally, we need as many equations as there are variables.

Sometimes inequalities are used in solving problems.