Math Problems Strategy

Before doing anything, make an effort to understand the problem

❖ What are you being asked to do?

❖ Will a diagram help? If so, draw one.

❖ Can you estimate the answer? If so, what is the approximate answer?

❖ And, are any or all of the multiple choice answers in the range of your estimate? (If not, you should go back and take another look at the problem. You might have misunderstood or misinterpreted something.)

Start working the problem

❖ Neatness helps -- makes it easier to check your work

❖ Identify and find applicable formula (if any)

❖ Whenever possible, and if you have time, check your work (Example: Substitute your answer to an algebra equation back into the original equation and see if you get an equality.)

Does your answer match one of the multiple choice answers?

❖ Be careful -- some answers will match what a student will get if a common mistake is made

❖ If your answer has a match, great!

❖ If you don't get an answer that matches one of the multiple choices:
- ➢ Go back and double-check your work
- ➢ Look for simple mistakes (Examples: A missed plus or minus sign. Forgetting to reverse the inequality sign when multiplying or dividing each side by a negative number.)

Stuck on a problem? Mark the question to come back to it later (if you have time).

If you're running out of time, *just guess at an answer*. (No reason to leave any question blank. If there are 4 choices, a guess has a one-in-four probability of being correct!)
- ❖ And, a passing grade is somewhere around 65% of the questions correct. A correct guess could be worth as much as 5 points!

Word Problems

These can be a challenge, and the GED can have some tricky things to watch for. Let's look at a couple example problems.

Danika has a booth at the art fair. She allows customers to custom paint t-shirts. She has 250 t-shirts and 5 boxes of fabric paint.

User this information to answer questions 1 and 2 below.

The first two sentences don't have information that will help you solve the problem.

The third sentence is <u>important</u>:
- **250 T-shirts**
- **5 boxes of fabric paint**

1. **Each box contains 25 tubes of fabric paint. How many tubes of paint does Danika have in all?**

The phrase "in all" tells us we'll need a total of some type – but it doesn't necessarily mean we'll use addition. This first sentence tells us: 25 tubes per box, which is sort of like a rate.

So, for this problem, multiplication will provide the answer.

ANSWER: 5 boxes X 25 tubes per box = 125 tubes of paint

2. The total cost for the paint was $60. What was the cost of each box? (Assume each box costs the same amount.)

The phrase "of each" suggests division may be needed. It could also have said "per box", which also suggest division. Again, this is a rate using a per unit form.

Useful information:
- **$60 paid for ALL the paint**
- **Same cost for each box**

ANSWER: $60 divided by 5 boxes = 60 / 5 = $12 per box

Another example problem:

A family has monthly bills as follow:

Electric	$105
Gas	$62
Cable TV	$130
Water/sewer	$82

- **On a percentage basis, how much more do they pay for cable TV when compared to gas? (round to the nearest whole percent)**

- **What percentage of the total of the monthly bills shown is water/sewer? (round to the nearest tenth of a percent)**

Steps to solve:
- ❖ For the first question, identify the two things being compared. (cable TV and gas)
- ❖ Calculate the difference between those two ($130 - $62 = $68)
- ❖ When a comparison is to be made on a percentage basis, the thing being "compared to" is the base amount. In this case it is the monthly gas bill.
- ❖ So, $68 divided by $62 = 1.096
- ❖ To convert this decimal value to a percentage, multiply by 100.
  - ➢ 1.096 x 100 = 109.6 %
  - ➢ Since the question asked for the value rounded to the nearest whole percent, **the answer would be 110 %**.

- ❖ For the second question, first total all the monthly bills ($379)
- ❖ Next, divide the water/sewer monthly amount by the monthly total for all bills

82/379 = 0.21635

0.21635 x 100 = 21.635%

Rounded to the nearest
tenth of a percent:

21.6%

Key tips:
★ With word problems, ignore the unnecessary information
★ Write down the key numbers
★ Look for action words or phrases to help you identify the type of calculations needed. Examples:
   ○ **per**: probably division to find a rate or unit value (such as, miles per hour or dollars per item)
   ○ **total / altogether / in all**: likely addition to combine quantities
   ○ **how many more / how much more / left**: usually subtraction to find a difference or remainder

- **each / every**: often multiplication to find a total or division to find per item
- **split / share / divide among**: division to break into equal parts or groups
- **increased by / decreased by / more than / less than**: addition or subtraction to compare or show change