Action Steps for for Getting Unstuck and Successful Problem Solving in Math – Getting Unstuck

1.) Accept the state of being stuck
Being stuck in math is part of the process. The problems get harder so there will be challenges. But being stuck shouldn't mean that you are done or that you should move onto the next problem.

2.) **Be nice to yourself and use positive language.** Remind yourself that you have the smarts, skill and persistence to get through it.

3.) Try to figure out what has occurred that has stopped the effort to solve the problem? Fill in the blank: **"I am stuck because…"**

a.) You might feel that the question is **beyond your background** to solve. But if it's been assigned for a class, you should have some context. Building a **frame of reference** will help.
- Use your resources, primarily your notes and worksheets to orient yourself to the problem.
- What chapter or unit is this problem part of?
- How is this similar to or different from another question you have done?
- Naming the problem will often que your memory of a strategy to work towards a solution.

b.) Word problems are often **lengthy and intimidating** with lots of words and numbers.
- Reading the problem out loud will force you to slow down and consider each word or number in the context of the problem.
- Read the problem one phrase or sentence at a time (called chunking).
- Annotate/highlight numbers and identify math operation words. Refer to your notes of these words to make the translation from word to symbol. Cross out extra words.

c.) Maybe you aren't sure what the question is asking. Start by solving for whatever you can and then see how that helps to answer the question being asked.

d.) For advanced applications, it may not be explicitly stated which formula is required or even that a formula is needed. Your experience with solving other types of problems will help you here.

e.) Feeling uncertain or not wanting to make a mistake can bring problem solving to a screeching halt. It is okay to be wrong. Figuring out what won't work is an important part of the learning process. So, pick up the pen and write something down.

- Make a **list** of words and numbers.
- Draw a **picture, diagram or model** and label it with numbers and relationships between the numbers.
- **Introduce a variable** to substitute for a word. The Mississippi River Bank becomes 'm' or, a small piece is 's' and a large piece is 'l'.
- **Make a table** of relationships. Does it fit the model of (x,y)?
- Try the problem with **easier or smaller numbers.** If the problem involves fractions, substitute 'nice' numbers. Work through the process and follow it again with the fractions.
- Can you get close with **trial and error or estimation?** Working backwards from a solution can help with the process.

4.) Know when it's time to **do something different**. If you've persisted for 10 or 15 minutes, tried some of the above techniques, and aren't making any progress, it is probably time for a change of strategy. Get some help from a friend or email your professor. Move onto the next question. Go for a short walk and then try again.

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