BEING STUCK ON MATHS PROBLEMS

So, you can't get to the end of (or perhaps even start) a maths question or assignment. You can't see your lecturer/tutor/classmates for a while. What can you do?

*Here are the four reasons you might be stuck and what **you** can do about it.*

You haven't read through the material properly yet

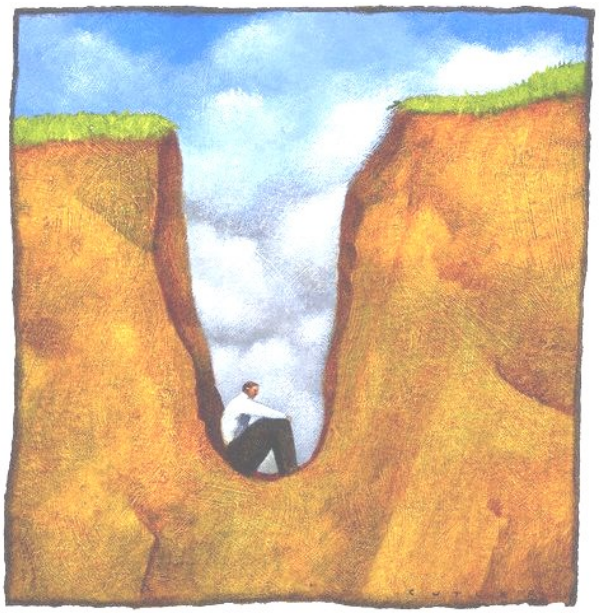
"Well, I sat through the lecture on this topic and looked through the notes but couldn't find anything useful."

Attending lectures is only part of the learning process and maths problems at school often asked you to apply a method or formula that appeared in an obvious place, probably with a box around it. At Uni, lecturers often expect you to have a wider grasp of more complex topics so you have to dig a bit deeper.

***SOLUTION*:** Get your lecture notes and text book, find a nice quiet place and do some reading. Start where you *think* the right information will be. Read backwards if they use concepts or definitions you don't understand to find out what they mean. Write out a summary of the topic as you go and you'll see how concepts link together to create a logical flow ideas.

You aren't using all of the information in a question

Many problems in maths are solved by simply piecing together the puzzle! If a piece is missing the puzzle can not be completed. The missing piece could be a number or word you missed in the text of the question, or maybe even a formula or result from the lectures which has slipped your mind.



***SOLUTION*:** Read through the question slowly, highlighting any keywords or numeric information. If you find that you didn't miss anything, then scan through your lecture notes to see if there are any formulae or theorems which will combine your current information into a new piece of information.

You have made a mistake earlier on

In maths, a single error can spread through your work, creating more errors as you move through your solution.

SOLUTION: To locate the source of your error, start with your first line of working and examine it closely. If you are convinced it's accurate, move to the next line. As soon as you aren't convinced by a line of working, try the problem again from that point onwards.

TIP: In algebraic manipulation, try replacing variables with simple numbers to see if two lines actually give the same numerical answer.

If you can't find an error, see if your friends can!

You are not engaging with the topic

Don't think
"What formula am I supposed to use?"

Think instead
"What does this question mean?"

If there is a formula, answering the second question will find it.

Here is an example of a problem which is best solved by *thinking about what it means.*

What is $\frac{1}{2}+\frac{1}{4}$?

Instead of straining to remember the formula to add fractions, it is much easier to realise that one half is also two quarters.

So this question is really saying

What is $\frac{2}{4}+\frac{1}{4}$?

Well, two quarters plus one quarter gives a total of three quarters, $\left(\frac{3}{4}\right)$

SOLUTION: Think about the context of the question. There is a picture behind every maths problem. Being able to see it is the most important skill a maths student can have.

If you have tried these four methods and are still stuck, then there may well be a mistake in the question.
Ask your lecturer/tutor for help. They are always impressed when it's clear that you have tried hard to solve it yourself first.

(mα+hs)*Smart*
Maths and statistics

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