
GMAT Math - Get Your Story Straight

Posted by Micheal Collins - 2009/08/01 15:26

As a math trainer (and hence someone who believes that pain is a necessary prerequisite to gain) I delight in offering some students problems that I know will send them down the wrong path. From which they will return humbled, though hopefully with their sense of determination to really get to the point renewed and invigorated.

You see, we are all in such a great hurry all the time.

We get a maths problem, and we love to skip right through to the end almost. We want the pain to go away so we throw down the first thing that comes to our heads. And hope for the best. Delude ourselves even that we are doing the right thing. We ignore the real goal which is to come up with a model that works, and makes sense, and will lead us to the solution.

In fact, when we are stuck, we look for anything that looks like "it might be right". That square hole? I'm sure some hammering on a round pin will do! Homer Simpson building the barbeque, if you've ever seen the episode (he gets the first part of the model wrong, and rather than backtrack, throws himself into his route with gusto, believing that somehow it will all work out right). I know you know what I'm talking about :)

As a fervent rationalist, I know that mathematically this is the wrong way to proceed. And unless you recognise the problem that we can all suffer from, forget about that MBA consulting interview going anywhere but south, and I don't mean towards Florida for Spring break either. Or consulting the Stones on their Rio concert. That's an example of "Hope as a Strategy".

When you approach a maths problem, do so with the view of getting the logic right first, and leave any numbers to come out of the model, and deal with them at the end. This is what I see when I view a problem in three layers, the visualisation, cognitive and numerical layers.

Post-Visualisation, when I have all the knowns and unknowns classified, I start coming up with a way to evaluate the unknowns. I still refrain from throwing in numbers because I know that this will reduce my focus, and send me off on tangents again. Worst of all, is what I see happening in the kinds of problems I mention at the top of this article where I know people will simply write down the wrong thing. I explain to them a split permutations problem, and then ask them to work out a completely different problem (like a bookshelf problem) that looks superficially the same, or contains words that they've seen in similar problems. Nine times out of ten, they'll write down the split combinations formula and try and force it into the bookshelf problem.

Example :

5 delegates sitting at a conference table, 2 delegates on one side, three on the other. How many ways can they arrange seating if people have to stick within their groups on the same side of the table?

Answer is $2! \times 3!$ of course. Duh.

So, I then say, right suppose I make 5 coin tosses in a row, each one can be either head or tail, and I want to know how many coin tosses can have exactly three heads. So, the class thinks, OK, 3 Heads means 2 Tails. Oh yeah, that's like $2! \times 3!$ isn't it?

And they write down those familiar looking numbers. And of course don't analyse the logic behind it. They are in such a hurry that they can't wait to finish the problem by writing something, anything down.

So, please listen to me : in a maths problem, THE NUMBERS COME LAST. They do NOT come first. They come LAST.

Maths problems are testing how you put your story together. The actual numbers part is the tail end of the problem. Never meant to be the thing they are testing. This is elementary math that you are thinking of. The GMAT is NOT a test of your ability to write down numbers. It's a test of your ability to come up with a model that makes sense, and is efficient. The sort of thing you aspiring MBAs are supposed to ooze from every pore post-graduation. I know, I'm one of them. See this oozing? See it?

So, don't write down something that you think is the right number that you always use on one of these problems, get the story right first. Be really clear about how you answer the problem. Think, "Hope is not a strategy".

The learning goal of a math problem is not memorisation of one solution. Nor is it to show that you've "made an honest effort" by writing something, anything down.

It's about getting your story straight, and not moving forward on execution til you have to, and then when you see the

plan works and makes sense, executing like a bullet.

Behold my mantra : THE NUMBERS COME LAST

Now, assume the (lotus) position and get ommm-ing.

=====