

If you're like many GMAT test-takers trying to bump up against that "glass ceiling" of 700, you may be frustrated that you keep studying and drilling math concepts and problems but you're still not improving on Data Sufficiency questions. Does that sound like you?

If so, there's a reason. While Data Sufficiency both involves math and appears on the Quantitative Reasoning section of the GMAT, it's not simply a math question. It's a logic puzzle that hinges on math concepts, and your ability to embrace that subtle difference might just be the difference between reaching your goal score and falling short. For example, consider a few Data Sufficiency questions that employ Geometry principles – as Geometry tends to be among the topics for which students study the most "stuff".

Line J runs tangent to Circle A, which is centered on the origin. What is the slope of Line J?

- (1) Line J runs through point (5, 5)
- (2) Line J is tangent to circle A at point (0, 5)

Now, many – in fact most – test-takers will see this as "a slope problem". And looking at statements 1 and 2 together they'll see that they then have two points on line J and can therefore determine the slope, because the main "slope rule" is that the change in Y over the change in X = the slope.

But wait – the name of these questions is "Data Sufficiency", which means essentially "when is the information enough". The game being played isn't really a test of your geometry knowledge – it's of your ability to manage resources. And if you pick C here you're not managing your resources very well. Look at the data that you're leaving on the table – in picking C you don't use circle A at all, and you don't use the fact that line J is tangent to it at all. If you leave that much information unused you're failing at the game of Data Sufficiency, which is in large part about packaging resources in an efficient way.

Now, as it turns out, there's a rule for tangency and slope. At the point of tangency, that line is perpendicular to the diameter of the circle. But even if you don't know that rule – and it's such a little-used rule that most test-takers won't encounter it at all in their practice tests and questions, so most won't have it top of mind on test day – the logic that C leaves too much data on the table can help you. Draw a circle and a tangent line, and see if you can draw any other lines that touch the circle at only that one point. You'll find that you can't – for every point on a circle there is only one line that can be drawn as a tangent. So even without the rule you can prove to yourself that with that one point you'll know the slope. And more importantly, following that logic you should be ready to do that – the test isn't testing you on whether you know how to calculate the slope, but rather on whether you can leverage information and logic to efficiently solve problems. Remember the all-important clause in choice C: "...but NEITHER statement ALONE is sufficient". If you can do it with one statement alone, you don't get to use both, so always be on the lookout for clues (such as the fact that choice C is a little too obvious here) that show you that you need to spend a little more time trying to squeeze more value out of each statement.

Let's try another:

What is the perimeter of right triangle ABC?

- (1) Side AB = 4
- (2) Side BC = $4\sqrt{2}$

Again, C looks pretty obvious here, right? If side B were 4, then you're looking directly at an isosceles right triangle. But beware – you don't really know that this one is isosceles. You only know that it's a right triangle. And in right triangles, $a^2 + b^2 = c^2$. So why couldn't the third side be the hypotenuse, with the Pythagorean equation being: $4^2 + (4\sqrt{2})^2 = c^2$. That would make $c^2 = 16 + 32$, so c would be the square root of 48.

And again, the logic is more important than the math – here the GMAT isn't really testing whether you know the math, but test-takers are often proud to show the test that they did, indeed, memorize that 45-45-90 flashcard. It's a logic game, though, and the GMAT here is tempting you to make an assumption, that with those two sides the third must fit within your quick-recall box.

Your clue here: C was a little too easy. And so let that be a lesson for you: if you can learn to play the game of Data Sufficiency that will be even more valuable to you than just the math knowledge that you bring to the test center. Look for clues – when a particular answer looks a little easy, you should reconsider your stance and see if you can get more value out of one of the statements. While content is important on the GMAT, the GMAT remains predominantly a reasoning test, so while you might like to turn your mind off and rely on short-term memory, the GMAT won't likely reward you for doing so.