

According to research by the Graduate Management Admission Council, the most common complaint among GMAT test-takers is that it's difficult to find good written solutions to GMAT practice problems. And while, in a way, this blog is offended (how could you read our pop culture and political commentary laden solutions here and not find them great?!), we'd also like to say this:

The lack of high-quality solutions to GMAT problems could be a very good thing for you as you study.

Now, let's first admit that it's completely understandable that many students are frustrated with written solutions. Written solutions have natural limitations to them – they have to start with a first word and end with a last word and therefore don't lend themselves well to tangents or mini-lessons within. They generally need to fit in a relatively-fixed space (or your Official Guide for GMAT Review wouldn't fit inside any kind of carry-on luggage), and so they typically pick one method to solve a problem and go with that. And in the interest of time and space they'll often focus on "what to do" and not as much on "why you'd do that."

And, yeah, a lot of solutions get lazy. The truly-helpful explanation often requires the use of a well-developed analogy or a smaller-scale problem to use as an introductory tutorial to build up to the more complex problem. But when the Official Guide for GMAT Review or a test prep company asks someone to write a set of 50 solutions at once, coming up with that mini-lesson for all 50 is a yeoman task. So be careful of words like "unidiomatic" that frequently appear in official GMAT solutions – there's almost always a logical reason that a sentence structure is incorrect, but when an author has started and backspaced and re-read and deleted, that tantalizing "let's just call it unidiomatic" idea may very well be what's left.

Now, that explanation of why solutions tend to underwhelm may not help you at all on the GMAT, but now that we've shown you that it is a real and persistent theme, let's examine why that can be a good thing for you:

Lackluster written solutions are your invitation to connect the dots.

The problem with very good written solutions? They don't engage your mind – they satisfy your curiosity about *that question*, but don't typically provide a lasting takeaway for you. You may realize from a detailed solution that you "have to factor out the common variable but then consider whether it could be negative before you divide both sides of the inequality by it", and you may write that down in your notes, but you don't get that "a-ha!" moment of realizing it for yourself. And that process of discovery is much more valuable than is the mere act of being told.

Consider this problem, which appears on the official GMAT Prep practice tests.

$\sqrt{x^2} / x = ?$

- (A) 1
- (B) 0
- (C) -1
- (D) -x
- (E) $|x| / x$

There's an absolute ton to be learned from this question, which you won't see on test day but for which the themes will persist. A (fairly) well-written solution for this question might say:

(E). In this question it's important to consider the fact that x itself could be positive or negative. When the radical sign for square root is present, the solution is always nonnegative, so the numerator of this fraction will be greater than or equal to zero. Your first inclination is probably to think in terms of positive numbers, anyway, so you might plug in a value for x such as 4. Taking the square root of 4^2 and dividing by 4, you'd get the answer 1. But the denominator could be negative: if $x = -4$, then the numerator asks for the square root of 16 (which is 4), and that will be divided by -4, giving the answer of -1. This should demonstrate to you that the sign of the variable matters – the fact that the numerator cannot be

negative but the denominator could be positive or negative should tell you that. Accordingly, the answer must be (E), which controls for that. If x is negative, the solution will be negative, and if x is positive, the solution will be positive. That is consistent with choice (E), so choice (E) is correct.

Now — that solution is probably decent and at least on par with what you'd see from any prep books out there. But in a way the worse that solution the better for you. Because no matter how good the solution to that problem is, it's going to leave some value on the table. As long as you know that the answer is E and you have the problem in front of you, you should be able to connect those dots. And connecting the dots forces you to consider things like:

*Why isn't the answer just 1?

If you move to investigate this, you'll have to force yourself to consider negative numbers. And one of the most important themes on GMAT quant is "make sure to consider different types of numbers" — positive, negative, fraction, 0, etc. A solution hands you positive vs. negative — but if you have to examine the answer choices you see that for yourself. "OH!! The answer isn't 1 if I try a negative number...that means that when an answer seems kind of obvious I should think about the presence of a negative number and see if that changes things."

*Why are three answer choices plain numbers, but two of them involve variables?

If you just read the solution, it leads you to choice E. but if you have to connect those dots, you have to consider what makes E different from the other choices. And this should lead you to recognize its very essence — "oh, since this equation doesn't pop out an exact number I need to find a little bit of 'undone math' in the answers. When some choices are numbers and some are math, I should consider whether the numerical answer I get once is *always* the answer, or whether I need to use some incomplete math to get toward an answer like that."

*What the heck is an absolute value doing here if there isn't one in the problem?

This forces you to think a little bit about how absolute values impact problems in which positive/negative properties are uncertain. And it also provides you with a bit of an overall clue for how to approach all of test day. If the problem or any solutions have an absolute value, there's a really high likelihood that the properties of positive/negative/zero will be in play, so you'll need to fixate on that.

So that's this problem as an example, but more generally — recognize that your GMAT success almost never hinges on your ability to understand "that problem" but much more on the broader takeaways you derive from that problem; the deeper conceptual understanding that comes from having reasoned your way through hundreds of problems; and on your ability to recognize themes and clues. It's almost impossible to pick up these items simply from written solutions to homework problems no matter how valuable those solutions are. In order to succeed on the GMAT you don't want "problem solutions" you want "lasting lessons." And lessons come from breakthrough, "a-ha" moments, from invested struggle to form conceptual links, and from the age-old adage that necessity is the mother of invention. Lessons come from connecting the dots from problem to correct answer.

In Mick Jaggerian fashion, GMAT problem solutions won't always give you what you want, but they pretty much always give you what you need — a problem and a correct answer, and an opportunity to challenge yourself to connect the dots and build valuable understanding and strategy. And when that fails... this blog is always here for you.