

If the political convention season had one theme in its most-talked-about speeches, it was essentially this: interviewing presidents. Last week, [Clint Eastwood](#) owned the Twittersphere with his interview of an invisible Barack Obama, who responded to those questions with exactly zero words (largely because he wasn't actually there).

And in this past Wednesday's most-Tweeted-about speech of the DNC, Bill Clinton talked about a question that he's frequently asked in interviews, and one of his signature lines of the night was his one-word response: Arithmetic.

Now, whether you agree with Clinton's assertion that the solution to many of the complex American budget problems is that one word, Arithmetic, is a discussion for another blog. But what cannot be disputed is that Arithmetic is the solution to some of the most complex GMAT problems you'll see – so you'd better not overlook the importance of Arithmetic.

The GMAT is a test on which the most complex problems often have the simplest solutions, at least for those willing to reason through them. Students often chase the "hardest" content items available on the test (for example, Veritas Prep's best-selling individual lesson book is Probability and Combinatorics) and breeze past or overlook-entirely the most useful items (similarly, the book that most Veritas Prep instructors would give to their brother or sister who only had time to study one lesson before taking the GMAT would be Arithmetic). Let's take a look at how some of the GMAT's trickiest-looking problems lend themselves to success for even those country boys who "still think  $2 + 2 = 4$ ".

What is the sum of the digits of integer  $k$ , if  $k = (10^{40} - 46)$

- (A) 351
- (B) 360
- (C) 363
- (D) 369
- (E) 378

While this may look like a monster problem, it's really just one of arithmetic.  $10^{40}$  is an insanely large number, but conceptually it's not much different from  $10^3$  (i.e. 1000). If you test this relationship with a few small numbers, you can get a good look at what  $k$  will look like. For example:

$$10^2 - 46 = 100 - 46 = 54$$

$$10^3 - 46 = 1000 - 46 = 954$$

$$10^4 - 46 = 10000 - 46 = 9954$$

Do you see the pattern? Every time we add one to the exponent, we add another 9 to the solution. And the number of digits in the solution is always the same as the exponent itself. So for this problem, where the exponent is 40,  $k$  will have 40 digits: a 5, a 4, and the other 38 are 9s. And since  $5 + 4$  is 9, then really we're just adding up 39 9s. And  $39 \times 9$  is 351 (or you can just see that it will end in a 1, and only A matches).

Now, this problem looks to many to be complex. But heed Bill Clinton's advice – it really just comes down to Arithmetic. The "hardest" math on this problem is taking  $10^4$ , or multiplying  $39 \times 9$ . "Special" math skills are infrequently required or rewarded on the GMAT – sound fundamentals in Arithmetic, Algebra, and a few conceptual rules of Geometry, Probability, and Statistics are generally all you need, provided you supplement those with reasoning and ingenuity.

So to succeed on the GMAT? Make sure you emphasize Arithmetic, and look for opportunities to simplify complex problems with Arithmetic. Small steps with Arithmetic will add up to a high score.