Magoosh's Complete Guide to the GMAT

Table of Contents

Introduction

This eBook is meant to serve as an introduction to the new GMAT and combines information from some of the most popular posts on the Magoosh GMAT blog. If you want to know what to expect and how to prepare for the GMAT, this eBook is for you!

The Magoosh Team

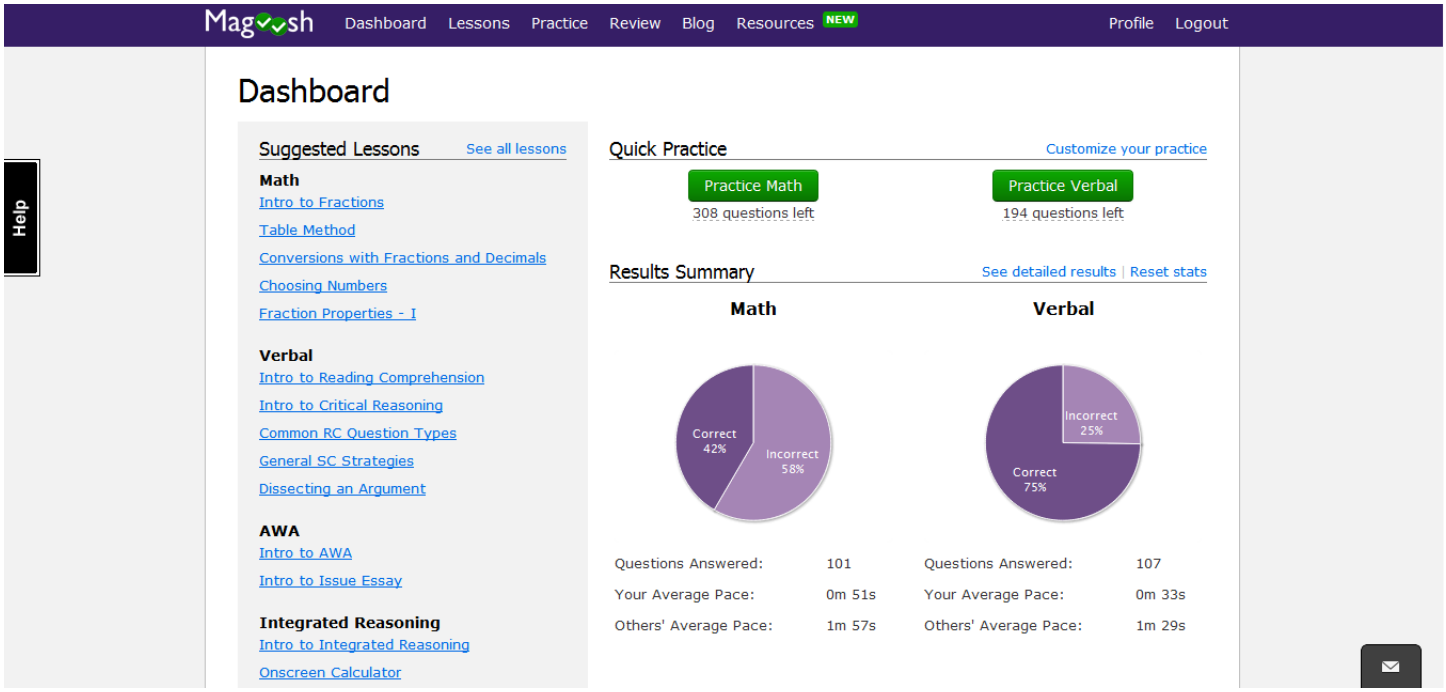
E-mail us at support@magoosh.com if you have any questions, comments, or suggestions!

About Us

What is Magoosh?

Magoosh is an online GMAT prep tool that offers:

- Over 250 Math and Verbal videos, that's over 20 hours of video!
- Over 800 Math and Verbal practice questions, with video explanations after every question
- Material created by expert tutors who have in-depth knowledge of the GMAT
- E-mail support from our expert tutors within 24 hours
- Customizable practice sessions and mock tests
- Personalized statistics based on performance
- Access anytime, anywhere from an internet-connected device



Featured in

THE WALL STREET JOURNAL. San Francisco Chronicle The Boston Globe

The Telegraph calcutta, india KTVU FOX 2 Xconomy

Why our students love us

These are some of the reviews of Magoosh posted on GMATClub. All of these students and thousands more have used the Magoosh GMAT prep course to improve their scores:

GMAT-720 May 09 | 2012

2 out of 2 people found the following review helpful

gmatclub VERIFIED REVIEW [What's this?]

★★★★★ By rijul007 joined: October 12, 2011 | 20 | 14 | non-native speaker

Improvement: N/A | **Verbal:** ★★★★★ | **Quant:** ★★★★★

This review is for: Magoosh Premium | **Location:** Online |

The video lessons were very helpful. All the GMAT topics were covered wonderfully! Also the OG video solution for maths came in handy.
The practice questions helped me a lot in finding out my weak areas. At the end of each session, it also suggested me some video lessons that helped me improving specific areas.
Another thing that really impressed me was their prompt response to my queries, be it related to specific questions or GMAT as a whole.
Magoosh played a very important role in my GMAT preparation.
I would certainly recommend this course to everyone, not just GMAT, but also for GRE.

Big fan of Magoosh March 26 | 2012

2 out of 2 people found the following review helpful

gmatclub VERIFIED REVIEW [What's this?]

★★★★★ By juliacollege11 joined: March 26, 2012 | 0 | 0 | native speaker

Improvement: N/A | **Verbal:** ★★★★★ | **Quant:** ★★★★☆

This review is for: Magoosh Premium | **Location:** Online |

A friend of mine who was studying for the GRE recommended Magoosh, and I couldn't be happier with their service. The reason I found Magoosh so helpful is that the GMAT is all about tips and tricks: without Magoosh, I would never have felt as comfortable with the format of the test and the themes of the questions. The GMAT is unlike any test I have taken before. I just graduated college, so although I will be taking the GMAT again with more math training, Magoosh helped give me a lot of confidence because of the strategies the lessons taught me. Magoosh helped me focus on what was important so I spent more time studying the right areas, and calmed me down so that I spent less time worrying and more time studying.

Great GMAT Prep

April 03 | 2012

2 out of 2 people found the following review helpful

gmatclub VERIFIED REVIEW [What's this?]

★★★★★ By qc9244 joined: February 26, 2012 | 0 | 0 | non-native speaker

Improvement: N/A | **Verbal:** ★★★★★ | **Quant:** ★★★★★

This review is for: Magoosh Premium | **Location:** Online |

I have been using a combination of study materials, but out of all of them I have to say the Magoosh Premium is the best of them all. the pros of this amazing prep course I've seen include the following:

-ability to use the software anywhere, whether it be on a PC, Mac, tablet, smartphone, or any other device with internet connection
- breakdown of the topics in the tutorial section
- ability to filter specific topics to work on in the practice section
-being able to track problems answered incorrectly, correctly, and track progress
-the option to flag specific problems in order to take another look at it later
-tutorial videos that were related to the problem after you complete each problem if you feel you need another lesson on that specific topic. tip of advice for watching video; right click on lesson video below the explanation of how to solve the problem and choose option to open in new tab.I found this to be very helpful.
-good stimulator of the real GMAT through the practice portion

From 540 to 710

January 27 | 2012

1 out of 1 people found the following review helpful

gmatclub VERIFIED REVIEW [What's this?]

★★★★★ By Anonymous joined: October 20, 2011 | 0 | 0 | native speaker

Improvement: 170 Points | **Verbal:** ★★★★★ | **Quant:** ★★★★★

This review is for: Magoosh Premium | **Location:** Online |

In my opinion, this is a must-have for anyone studying for the GMAT. I used a combination of tools but I credit Magoosh with much of my progress because of the detailed, easy-to-follow explanations and the ease of use. There are a lot of services that offer practice questions but Magoosh helped me clearly understand what I was doing wrong and taught me strategies for how to work faster and smarter. Also, the ability to customize practice sessions by category and difficulty level was incredibly helpful when I needed to zero in on problem areas. It's really easy to log-in even for a quick 15 minutes when you have it - every minute counts.

The GMAT

Overview of the Structure of the Test

What is the GMAT?

GMAT stands for "Graduate Management Admission Test." Just as the SAT is an admission test high school students need to take to get into college, the GMAT is an admission test after-college folks in the business world need to take to get into business school. The vast majority of MBA programs required a recent GMAT as an essential part of the admission process. Different schools use and judge GMAT scores in different ways. As a general rule, a good score on the GMAT can give an applicant a strong competitive edge in applying to the best business schools.

Who writes the GMAT?

The GMAT is created by GMAC, the "Graduate Management Admission Council", a private company headquartered in Reston, VA outside of Washington, D. C. The GMAC reflects the concerns of both business schools and private industry, theoretically soliciting their views in shaping the GMAT.

How much does it cost to take the GMAT?

As of October 2011, it costs $250 (U.S.).

How do I register to take the GMAT?

Go to GMAC's website, www.mba.com, for complete information and to make an appointment to take the GMAT. As part of that process, you will be able to select a testing center near you.

What is the format of the test?

You will take the test on a computer at an official testing center. You will need to present valid I.D. (such as a Driver's License + a major credit card). You will have to lock up your personal belongings (cell phone, wallet, etc.) before you are allowed to take a seat at a computer. You are not allowed to take a calculator, notes, or even blank paper into the testing room.

Some sections of the test employ Computer-Adaptive Testing (CAT), which means the difficulty level of the questions is adjusted automatically as you move through the test.

The testing center will provide you with a booklet of five erasable note board and dry erase pens, so you can write things down if you need to. The Integrated Reasoning section has an on-screen calculator, but the Quantitative section is calculator-free.

What are the sections on the GMAT?

1. First you will have the Analytic Writing Section (AWA), which presents the "Analysis Argument." This is 30 minutes.
2. The AWA is followed immediate by the 30 minute Integrated Reasoning section (IR). This section has 12 questions and does not employ CAT. This section is new, as of June 5, 2012.
3. Optional short break (less than 8 minutes)
4. Quantitative section: 75 minutes, 37 questions, employs CAT
5. Optional short break (less than 8 minutes)
6. Verbal section: 75 minutes, 41 questions, employs CAT

The entire ordeal, including all the initial paperwork, will take just under 5 hours.

Understanding the GMAT Score Report

When you take the GMAT, often at the test center itself you will get some of your score as s... you are done with your test. You can choose to receive the full score report electronically or v... snail mail. The electronic version will arrive by email within 20 calendar days. The hard-copy report will be snail mailed within 20 calendar days, but given the vagaries of snail mail, may or may not arrive in your snail mail box within 20 calendar days.

You can take the GMAT more than once. You score report will include all GMATs you have taken in the past five years.

What is in the Full GMAT Score Report?

The GMAT Score Report has the following components

1. Your Quantitative Score (0 – 60), with percentile
2. Your Verbal Score (0 – 60), with percentile
3. Your Total GMAT Score (200 – 800), with percentile
4. AWA Score (half-integers from 0 to 6), with percentile
5. As of June 5, 2012, Integrated Reasoning score (integer from 1 to 8)

Item #3, the "Total" score combines your Quantitative and Verbal scores, but doesn't take any other parts into account.

What is a percentile?

The percentile associated with a particular score is the percent of the population whom you have outscored by getting that score. For example, a total GMAT score of 700 is about the 90th percentile. This means: if you score a 700 on your GMAT, you have done better than 90% of the folks who took the GMAT. (The scoring has been consistent for years, so GMAC can say: it's not just 90% of the folks who took the GMAT when you took it, but 90% of everyone who took the GMAT in the past three years.) Another way of saying that: scoring above 700 puts you in the top 10% of folks taking the GMAT.

What is a "good" GMAT score?

This is an impossible question to answer in general. In some sense, the answer is: a "good" GMAT score is a score sufficient to help you get into the Business School that is right for you. What makes a Business school "right" for you? A panoply of factors, including location, cost, requirements, the feel of the school, etc.

Obviously, the higher the score, the more options you will probably have, and it may b
some extent, you can offset a lower college GPA with a high GMAT score.

It is a fact that a solid test prep source, like Magoosh, can raise your GMAT grade substantially
fact, Magoosh has a 50 point score increase guarantee. If you have already taken an official GMA
test once, then Magoosh guarantees that if you use the product extensively, your score will increase by at least a minimum of 50 points (many users see much larger increases). That's extraordinary: that can bring you from 650 (79th percent = top 21%) to 700 (90th percentile = top 10%)!

By all means, strive to do the best you can do, and use effective help like Magoosh. At the same time, it's important to be realistic about your abilities and the time & energy you have to prepare. If your first GMAT was a 460, then with concerned effort and the support of Magoosh, you will be able to get up into the 500s and maybe even the 600s, but it may be that a GMAT in the high 700s is unrealistic for you, and that's OK. Always strive for your personal best, but it's hard to compete with everyone out there. The goal of the GMAT is to get you into Business School, the goal of business school will be to get an MBA, and the goal of an MBA is to get into management positions in the business world. Many folks who are wildly successful in upper management in the business world had less than stellar GMATs and went to unrecognizable unprestigious business schools. Conversely, some folks are brilliant test takers, and ace the GMAT, but then wind up not so successful in the rough and tumble of the business world. Trust the unique combination of gifts and talents you bring, seek to learn the skills that will most complement and bring forth who you are, and learn to recognize the environments in which you can most effectively thrive. Do the best you can do on the GMAT, and trust that this will be good enough to lead you to where you need to be in the big picture.

Time Management Tips

The First Five Questions Myth

A popular story that has been bandied about so much in GMAT circles that it has taken on a patina of truth is that the first part of the test is the most important. Many claim that the GMAT algorithm "knows" your score after only the first five questions, and the rest of the test doesn't make too big of a difference.

While nobody—except for GMAC—knows exactly how the algorithm works, do not try to game the system by spending most of your time at the beginning of the section. Rather, you should spread your time out over the entire section, making sure you finish (lest you suffer a penalty for not finishing).

The lay of the land

Before I talk about some specific time management tips, it is important to know exactly how many questions there are in each section.

Verbal: 41 questions, 75 minutes
Math: 37 questions, 75 minutes

Time per question

The above gives you about 2 minutes per question, a little less in the case of verbal. Budgeting two minutes per question, however, is not a sound strategy. Some questions are more difficult than others. For instance, a rhombus inscribed into two overlapping circles is probably going to take a longer than 2 minutes. To give yourself time for more difficult questions, you must solve the easier questions in closer to one minute.

Of course knowing which ones are difficult and which ones are easy you should take practice tests.

Burning Questions

If you have do not have a clear path to the solution, but are still flailing about after a couple of minutes, burn the question and move on. At this point, your nerves are going to make finding a solution very difficult.

On the other hand, if you worked your way to a solution and after two minutes it is not the right one, go back and check your steps. Very often one little arithmetic mistake can prevent you from getting the correct answer.

Finally, if you have a certain weakness and a difficult problem exploits it, you can save time by randomly guessing on the question. The logic is you are unlikely to get the correct answer even

after a couple of minutes. Burning a question or two shouldn't hurt you too much, and [illegible] you save time (and overwrought nerves), it can indeed help you.

Finishing Early

If you are finishing early, but are still scoring below the 80% on either quant or verbal, then figure out in which areas you are making mistakes. For instance, if you are making careless errors in quant, some of the extra remaining time could have been used to review questions. If you notice you are missing a few questions on a long reading passage, then slow down your reading, or take more care when going back to the passage to answer the question.

Take Practice Tests

It is best not to first apply these tips on test day. Instead, refine a time management strategy by taking practice tests. Often you will arrive at a time management strategy that speaks to your strengths and weaknesses.

Computer Adaptive Testing

It is important to understand how the GMAT calculates your score, and what this means for your test-taker.

Fact: The GMAT uses Computerized Adaptive Testing (CAT)

This means, first of all, that each question you answer right or wrong determines what questions you will see later in the GMAT. It also means that any two people, even two people of nearly identical abilities and preparedness, will not see identical questions when they take their respective GMATs. BUT, because of the magic of psychometrics, two people who perform with comparable skill & strategy & focus will have comparable GMAT scores. The magic of how the test is different for everyone but the score is fair for everyone — if you don't have a Ph. D in Psychometrics or Statistics or something like that, then just take that magic as an article of faith.

How does CAT work?

The GMAT is trying to figure out objectively your Quantitative Ability and your Verbal Abilities in a relatively short time. Think of it as a big "twenty questions" game. Suppose your "opponent" picks a US city, and you are allowed to ask "horizontal yes/no questions" (e.g. "Is your city east/west of X?") and "vertical yes/no questions" (e.g. "Is your city north/south of X?).

You might ask a bunch of horizontal questions. It is west of Albuquerque? No. Is it east of Atlanta? No. Is it east of Denver? No. Is it east of Santa Fe? No. OK, that narrows things down to a relatively thin band.

Then a bunch of vertical questions. It is North of Wichita? No. Is it north of Birmingham, AL? No. It is north of New Orleans? Yes. Is it north of Tucson? No.

Among major cities, those answers are enough to hone in on El Paso, TX. Much in the same way, the GMAT asks you two question types, Math and Verbal. By giving you easy & hard questions of each kind, it hones in on what is most appropriately your level.

Not so exact

That analogy is helpful for understanding CAT, but the problem is: things are not that exact. If we want to know where a city like El Paso is, that's totally objective, and the questions about whether such-and-such city is N/S or E/W of El Paso are also totally objective. That means, with very few questions, one could hone in on an exact location.

A person's math & verbal ability is not so precise a thing. First of all, there are easy questions you definitely can answer, there are super-hard questions you definitely can't answer, but for the questions in-between, it's gray: there's a difficulty level at which you ***usually*** get questions right, another slightly higher at which you ***usually*** get the questions wrong. For the sake of argument, let's say that we have figured out questions that are exactly at your ability level if, on average, you get questions at that level right 50% of the time. Clearly, whether you answer any one question

correctly or not is not enough information to tell whether it's at your ability level or n
determining your level is going to be about an average over several questions, not simply
answer to one. Furthermore, there are frequent aberrations.
Super-brilliant people sometimes get an easy question wrong, and folks who are minimally prepared can still guess correctly on one of the toughest questions. With statistics, the computer can absorb such aberrations. What the computer is doing throughout your test is averaging over the difficulty ratings of all the previous questions, using the data about which you got right and which you got wrong to create a complex average that is the best estimate of your ability, and each new question it feeds you is the computer's attempt to refine that best estimate.

Your score is a composite result that takes into account the difficulty of each question you got right and the difficulty of each question you got wrong. The exact details of the algorithm that the computer uses to do this are (a) probably incomprehensible if you don't have a Ph. D. in Statistics, and (b) the secret proprietary information of GMAC. Legally, we don't have access to that algorithm, and in likelihood, even if we knew, we probably wouldn't understand it anyway.

Facts vs. Myths about CAT

Fact: *If you get medium questions mostly right, the computer will start to feed you harder questions; if you get medium questions mostly wrong, the computer will start to feed you easier questions*.

This is true. The CAT adjusts to your level throughout – much like the E/W and N/S question in the geography game above, it is constantly refining its picture of your ability, question by question.

Myth: *If I suddenly get a ridiculously easy question, that means I got the last question wrong*.

First of all, a question that seems easy to you may or may not actually be a truly "easy" question, that is, one that most people get right. Even if it is, no conclusion can be drawn about the previous question. The CAT is running a complex algorithm, which sometimes involves giving you a very easy or a very hard question. Don't take it personally: the computer is just running its algorithm.

Fact: *You can get several questions wrong and still get a good score*.

The CAT has to give you several questions well above your ability, questions that you almost invariably will get wrong, in order for it to zero in on your actual ability. You are not penalized for that: that's just what the CAT must do as part of its algorithm.

Myth: *The first question is super-important, because that determines the course of easy/hard questions from there*.

Totally false. The CAT is performing a complex process of estimation that can handle aberrations, even if one of the aberrations happens on question #1. Don't worry: over the course of the whole test, the computer will give you the combination of questions it must in order to determine your

abilities. Furthermore, the algorithm is such that order of the questions doesn't affect your score at all. If you get a certain question right then whether it was the first question, a middle question or the last question, doesn't matter at all. What does matter for your score is the difficulty of the question, and whether you got it right or wrong, but not where it fell in the test.

Fact: *Not finishing all the questions in a section hurts your score.*

That is quite true. It's exceedingly important not only to learn content and strategy, but all practice at working efficiently, so that you don't run out of time. Ideally, you want to hone your time management skills so that you have abundant time on even the last questions on a section.

Myth: *You can outthink the CAT.*

The algorithm is far too complex. There's no sense stressing about "how did I do on those question?" or "why is it asking this kind of question now?" Just do your best on the question in front of you at any moment, submit it, and then forget about that question entirely.

Fact: *Systematically reviewing math and verbal content, as well as strategies specific to each question type, can vastly enhance your GMAT score.*

That is most certainly true, and that's why Magoosh can give you such an advantage. With a couple hundred lesson videos discussing both content and strategy, and over 800 practice questions, each with its own video explanation, you will get top-notch preparation for the GMAT at only a fraction of what you would pay for a comparable course.

Guessing and Skipping Strategies for the GMAT

Learn what sophisticated GMAC research reveals about last-minute time-crunch strategies o
GMAT.

It's All About Timing

Of course, learning to solve problems under time pressure is an important part of preparing for the GMAT. Of course, you should do everything you can do to maximize your ability to perform at the highest level on as many questions as possible. Of course, that's what any responsible person preparing for the GMAT will strive to do.

All true, but as our friend Robert Burns (1759 - 1796) reminds us, the best laid plans of mice and men go oft astray. As well as you prepare, as diligently as you practice, you may find yourself at the end of a section on a real GMAT running out of time. What should you do? Guess randomly or omit the question?

Guessing vs. Solution Behavior

First, I need to clarify what I mean by "guessing." By "guessing", or "random guessing", I mean you have no earthly clue which of the five answer choices is right. The right answer could equally be any of the five as far as you are concerned. This would most often occur if you are doing rapid guessing in the last few seconds of a session — answering, say that last 5 question in the last 10-15 seconds, for example. (We'll talk about the wisdom of that below.) Conceivably, a question could occur in the middle of the test which utterly befuddles you, but given that you have been preparing diligently for the GMAT, the likelihood of something so arcane as to stymie you completely is remote at best.

If you study the question, and can eliminate some answers, but don't know which of the remaining answers is right, this is called "**solution behavior**". On average, solution behavior will benefit you. It is always, 100% of the time, much better than either random guessing or omitting. If you have any clue about a question, and can narrow the answers down to three or two choices, then guess from among those and move on. **NEVER** leave such a question blank. I cannot underscore that enough.

On the Verbal Section: Omit (AKA Skip)!

GMAC, those folks that design the GMAT, did a study in 2009 trying to answer the question about guessing or omitting in the final moments of the test. They looked at patterns in tens of thousands of GMATs, and culled through the data. You can read the whole paper at the link below, but I really summarize everything you need in this blog article.

It turns out, on the verbal section, it appears there is ***no substantial difference*** between guessing on the last few question or omitting them. Your score will be, on average, the same regardless of which way you choose. This is invaluable information, because it implies undoubtedly

the best strategy to use in that situation. I quote the GMAT gurus in the article: "If an found herself with only a minute remaining to answer the last four items of the verbal se would be to her benefit to spend time trying to answer at least one of the remaining questi thought while feeling confident that leaving the remaining items blank would not affect the sc much differently than random responding" (p. 12). Thus, when running out of time on the Verbal section of the GMAT, your focus should be: remain calm, and simply do your best working thoroughly with each question one at a time, even if that means there are two or three questions you simply don't see. That's the univocal strategy for the precious last minutes on the GMAT Verbal section.

On the Quantitative Section: Know Thyself!

The data from test takers is far more nuanced on the quantitative section. Here, the advice varies widely, depending on your abilities. I will assume you have at least a rough idea about whether you are a top scoring math student or someone who really struggles with math.

For folks who struggle with math, who are anticipating a relatively low grade on math (i. e. below 25), it turns out that, as in the verbal section, it is advantageous to omit questions. If you don't know, simply leave the question blank instead of randomly guessing. Again, if you have enough insight to eliminate even one answer choice, that's no longer guessing but rather solution behavior, and you should guess from the remaining answers. But if you truly have no clue, and especially if you are running out time, plan to omit questions, and do you best with the ones which you can either solve or apply solution behavior. (BTW, if you are really anticipating a GMAT Quant score that low, then please sign up for Magoosh! I swear, we can help you!)

For folks at the other end of the spectrum, folks very talented in the quantitative section and shooting for one of the highest scores, the advice is the polar opposite: omitting a question is one of the worst things you can do. If you are that caliber of math student, probably few GMAT PS or DS questions will outright stump you, but if you don't work quickly, running out of time might be a problem. If worse comes to worst, and you have less than a minute to do the last handful of questions, you will be much better served by randomly guessing than leaving anything blank.

What about the many folks in between, folks headed for a decent score on GMAT Quantitative, but not planning to blow the doors off? Well, if you're really good at math, omitting answers hurts you a lot. If you medium at math, omitting answers hurts you a little. Basically, you are better off answering every question, even if that means random guessing in a last mad dash at the end.

Summary

Those are the most sophisticated data-driven recommendations on GMAT guessing strategies available. Of course, if at any point you can practice solution behavior — that is, you can intelligently eliminate some answer choices and after that get stuck — then you should always guess from the remaining choices and never leave such a question blank. And, of course, the more you practice against the clock, and practice a wide variety of questions such as we have at

Magoosh, and learn time-saving strategies such as the ones we teach at Magoosh, then the dilemma of a last-minute crunch will be your problem at all.

Work Cited:

Talento-Miller, Eileen and Ranimn Guo. ***Guess What? Score Differences with Rapid Replies versus Omission on a Computerized Adaptive Test***. GMAC Research Reports, RR-09-04, February 1, 2009. Original paper available at: http://www.gmac.com/NR/rdonlyres/14987E08-3220-4D52-BDC3-D5EB12EAA7AC/0/RR0904_GuessWhat.pdf

Focused Studying vs. Diverse Problems

Consider these two extreme approaches to studying for the GMAT:

1) Focus on one topic/concept. Practice that same kind of problem exhaustively until you master it. Then move on to the next topic/concept. Repeat.
2) Practice a wide mix of problems every time you sit down to practice.

If those were the only two possibilities, zero diversity vs. 100% diversity in problems, then I would have to recommend option #2, only because that's exactly what the experience of the real GMAT will be!

When Beginning . . .

Fortunately, between obsessive-compulsive approach #1 and manic approach #2, we can find a little more balance. Let's say, when you are first learning a topic, or first relearning or reviewing a topic after not having seen it for years, then of course, some focused practice in just that skill will be very helpful. Of course, at the very beginning of your GMAT preparation, when everything is either brand new or seen for the first time in over a decade, you may be doing a good deal of focused practice.

Shifting the Balance

Even at the beginning, even in your first week of practicing, it's important to do some diverse-problem practice. It's good to see problems even though you haven't reviewed that topic yet — it's a good way to test how much you remember cold, and it's also a good practice for intelligent guessing, which you may have to do once or twice even on the real GMAT.

As you start to feel comfortable with a greater and greater portion of the content, you practice should shift correspondingly to fewer focused-practice problems and more diverse-practice problems. Whatever your projected prep time for the GMAT is, let's say that by the end of the first 10% of that time (that would be, a little after the first week in a 3-month study plan), you should be doing mostly diverse-problem practice, with short focus-practice sets just on what you are learning or have just recently learned. If, after several weeks, you are aware that in your diverse-problem practice, you have not seen a lot of such-and-such type of problem, and would like more practice to check your competency in that, then that would be an appropriate use of focused-practice in later stages of preparation.

The Danger of Too Much Focused-Practice

Focused-practice is useful as a learning tool in the beginning stages, when something really is quite new to you, but after that, too much focus-practice holds the danger that you will be able to solve that problem kind only when you in the "mode" of solving that particular problem. That's not how it will work on the real GMAT. On the real GMAT, you will submit your answer to question #23 about, say, geometry, and then question #24 about, say, percent increase, will pop up. BAM.

Without any previous warm-up in thinking about percent increase, right there, you are
have to do that problem. That's why it's critically important that the majority of your pr
close to 100% in the days leading up to the test —- be diverse-problem practice, so you simp
used to handling topics out-of-the-blue, however they show up in the random mix of problems

What Does "I Understand" Mean?

Those of us in test prep have become used to hearing folks tell us: *I thought I understood su such a topic, but then I did so poorly on it on the test* (whether a practice test or the real GMA Of course, there's a difference between a more academic understanding of a topic and the GMAT- specific strategies you will need for success on test day. Beyond this, though, there are also different levels of understanding, and it's very important as a student to appreciate to which level you are referring when you say "I understand X."

Stages of Understanding

We could outline, roughly, six levels of understanding.

Level #0 = no understanding, it's complete foreign, does not compute

Level #1 = looks familiar, "Yeah, I think I've seen that before," some dim memory of how to do it

Level #2 = with a little review, or some key hints or coaching, you can solve one of these problems.

Level #3 = In the course of focused-practice, you can solve these problems consistently. If you are in the "zone" for that problem type, then you can do it.

Level #4 = you can see the problem cold and, with no warm up, be able to solve it, time and time again. This happens in diverse-problem practice.

Level #5 = you can not only solve the problem, but explain explicitly the strategy employed in solving the problem

Level #6 = you can teach the problem clearly to someone who is struggling with how to work through it, and you can answer all their questions in a way they understand. (The old adage among teachers: "The best way to learn something is to teach it.")

What "I Understands" Means

Someone at Level Zero really can't legitimately say, "I understand," and saying that is a stretch for someone at Level 1. At Level 2 or above, someone can reasonably say, "I understand." That, though, can be a problem. Someone at Level #3 can say, "I understand X" --- indeed, they have made enormous strides beyond Levels #1 & #2 --- but in the mixed-problem format of a practice test, where the test-taker is faced with one problem type after another and has to handle each one cold, then Level #3 is not going to be sufficient. Sometimes, this is exactly what happens when folks say: "I understood X, but then I couldn't do it on the test."

Reach For the Stars

There's a saying: if you reach for the stars, you may get as far as the ceiling, but if you rea the ceiling you will never get off the floor. On test day, you will need to be a Level #4. One o best ways to guarantee that you'll get there is to reach for Level #5 and Level #6 in practice.

Some suggestions for how to do that: (1) make more of your practice mixed-review, and less single-concept review; (2) practice not only solving the problems, but writing out the steps of strategy for solving them; (3) practice with others --- that is, put yourself in a situation in which you have to explain your thought process to others. (4) if you are stronger in one particular area, do some informal tutoring, where you put yourself in the position where you have to answer someone else's questions. The forums (GMAT club & Beat the GMAT) can be great places to practice that.

Summary

Rather than say simply “I understand X” or “I don't understand X”, be more nuanced. Think about your understanding of each concept in terms of these levels, and ask yourself, for each topic, how would you push to the next level of understanding?

AWA

Analysis of an Argument

The GMAT will have one AWA question, an Analysis of an Argument essay. For years before 6/5/12, the GMAT had a second essay, the Analysis of an Issue essay, which was eliminated to make room for the IR section, so we don't need to worry about this one.

What is Analysis of an Argument?

On this writing assignment, the GMAT will present an argument, often in a context such as a newspaper editorial or the statement of a company. It generally will be the nature of this argument that reasonable people could argue either side, and whichever side you choose to argue does not matter in and of itself. You will have 30 minutes to read the prompt and construct your essay.

What is the task on the Analysis of an Argument?

Whether you argue for or against the argument, your job is to analyze the argument. This means considering questions such as: what are the assumptions of the argument, and how strong are they? What sort of facts would strengthen or weaken the argument? Are there alternative explanations or perspectives that would explain the facts in question better? In many ways, the skills you need for GMAT CR are quite similar to those you will employ on the AWA. You will not need any special knowledge outside of your own life experience and your general sense of the business world.

A successful Analysis of an Argument essay will be clear and cogently argued; it will present the individual critiques in a logically consistent order; it will identify all the points that in need of consideration; and it will use word choice and variety of syntax to effectively communicate.

Why does the GMAT have an AWA section?

Think about it. In the Renaissance, a business person would probably know personally all his clients and contacts. In the modern global business world, you will always have contacts whom you know primarily through writing (email, reports, publications, etc.) Similarly, many people important for your advancement will meet you the first time through your writing. Psychologist point out how crucially important first impressions are: for better or worse, folks' judgments about someone are often largely set by first impressions and only change when there is dramatically different new information. You need to be able to make a strong first impression in your writing, in the arguments you present.

On the GMAT, the strength of your argument will determine your AWA score. Five or ten years from now, in the business world, the strength of your argument may determine whether your business gets the new contract or is successful in a big sale, and those outcomes will have significant

implications for your career. On AWA, you are practicing a skill that will be of major i
down the road.

How important is the AWA on the GMAT overall?

Arguably, of the four GMAT sections (AWA, IR, Quantitative, and Verbal), the AWA is less important than the other three. It would be a mistake to devote as much time to AWA as you were devoting to any of the other three sections. It would also be a mistake to completely neglect preparing for the AWA. It's important to give the AWA enough focus so that you can be competent on it, but it's far less important to excel. The difference between, say, a 45 and a 55 on Quantitative or Verbal may be game-changing as far as your overall GMAT score, by contrast, the different between a 5 and a 6 on the AWA may not have any influence on any business school admission decision. An AWA score below 4, though, can raise serious red flags: that's why it's important to achieve basic competence on this section.

The Directions for the AWA

Get familiar with the parts of the question that never change!

The "Pre-Argument" Directions

Here are the directions that precede every AWA argument:

> In this section, you will be asked to write a critique of the argument presented. *You are* not *asked to present your own views on the subject*.
>
> **Writing Your Response**: Take a few minutes to evaluate the argument and plan a response before writing. Be sure to leave enough time to reread your response and make an revisions that you think are necessary.
>
> **Evaluation of Your Response**: Scores will reflect how well you:
> - organize, develop, and express your ideas about the argument presented
> - provide relevant supporting reasons and examples
> - control the elements of standard written English

Much of that I would call the "duh!-directions." Of course, this is a critique of an argument. Of course, you shouldn't ramble on about your own personal views. Of course, you should plan before you start writing. Of course, you hope to have time at the end to proofread and revise. All this is quite obvious.

The last section, with bullet points, is somewhat more noteworthy. The first bullet point tells us: a good AWA essay is well-organized, has a natural flow from point to point, and is clear and unambiguous about what it is saying. Those are all important points to keep in mind.

The second bullet point reminds us: what they present will be, in all likelihood, a flawed argument, but what you must create is a cogent and clear argument, and that will necessarily involve providing clear and relevant support. It's not enough simply to assert something baldly: you must provide justification for what you are saying.

The final bullet points may appear enigmatic: "control the elements of standard written English." What does that mean? Well, first of all, it means: no grammar or syntax mistakes; your GMAT SC correction practice will serve you well in this regard. It also means varying the sentence structure --- some simple sentences (noun + verb), some with two independent clauses (noun + verb + and/but/or + noun + verb), some with dependent clauses, some with infinitive phrases, some with participial phrases, etc. Finally, it means choosing the right words and the right tone: the tone

should be skeptical toward the prompt argument and persuasive toward the points you [illegible]g, but not arrogant or dogmatic in any way.

The "Post-Argument" Directions

The following paragraph always appears after the argument prompt. This is the real meat-and-potatoes of the AWA directions:

> Discuss how well reasoned you find this argument. In your discussion be sure to analyze the line of reasoning and the use of evidence in the argument. For example, you may need to consider what questionable assumptions underlie the thinking and what alternative explanations or counterexamples might weaken the conclusion. You can also discuss what sort of evidence would strengthen or refute the argument, what changes in the argument would make it more logically sound, and what, if anything, would help you better evaluate its conclusion.

First of all, notice it gives you one clear task: "be sure to analyze the line of reasoning and the use of evidence in the argument." Then, it lists several strategies that you might employ in your analysis. Don't feel compelled to use every one of these in every AWA essay, but you should be using most of them in most essays.

The first is no surprise: identify the assumption. We know from GMAT CR that the assumption of an argument is the argument's "nerve center", and finding it can be a vital strategy in either strengthening or weakening the argument. Along those lines, "alternative explanations" are alternatives to the assumption, and "counterexamples" are possible facts/scenarios that directly contradict the assumption.

Often, one problem in the flawed prompt argument they will present is incomplete or partially relevant evidence. DO NOT question the evidence cited: for the purposes of your analysis, accept any evidenced cited as such. Do consider, though: how well does the evidence cited support the argument? What evidence would be even stronger? Conversely, what kinds of evidence would weaken the argument even further?

The changes you recommend will be intimately related to the flaws you find. Basically, just find the flaws, and each recommendation will essentially be in the form "fix this flaw."

The task of deciding what "would help you better evaluate [the] conclusion" demands very much the same skills as does the corresponding CR question. Here, we need to "pull back the focus" and look at the bigger picture: what additional outside facts, or what kind of information, would put

this argument in a greater context and allow us to see how it works “where the rubber [illegible] road.”

Again, do not feel compelled to have to use every single one of these on each AWA essay, but you should practice all of them, because any of them could be a crucial piece of any particular AWA essay.

Know the Directions

It's true throughout the GMAT that knowing the directions ahead of time gives you an edge, because you don't have to spend time reading them on test day. This advantage is compounded on the AWA section, because the instructions are substantial: it's a lot to read, so it's that much less to read on test day. Moreover, the “post-argument” paragraph enumerates skills that it will be important to practice and master, so you walk into test day armed and ready with your “analysis toolbox” already prepared.

Typical Flaws in AWA Prompts

Get to know the common flaws, so you recognize them quickly on test day!

The AWA prompt will typically be a weak argument. Part of analyzing it will necessarily involve discussing its flaws. One of the biggest and most common flaws is a faulty assumption, discussed in greater detail here. Here is a list of other common flaws in AWA prompts, with example prompts in the OG (page numbers are given in OG 13).

Vague words

The words “few”, “many”, “more”, “less”, and “some”, by themselves without numerical qualification, can be vague. For example, suppose I say: “In Happytown, more people buy Smiley Doughnuts than buy Chipper Cookies.” What does that mean? Let's say, for the sake of argument, we even know that Happytown has 1000 adults residents. Does the statement mean: 995 buy Smiley Doughnuts and only 5 buy Chipper Cookies, a landslide difference? Or, does it mean: 501 buy Smiley Doughnuts and 499 buy Chipper Cookies, essentially no difference? Always consider the range of possibilities contained in vague words comparing quantity or size.

OG example prompt: “Speedee airline … offering more flights to more destinations than ever before” --- how many more? (p. 812, top prompt)

Inappropriate Comparisons

This form presents a premise and conclusion for Thing #1, which is often quite clear and undisputable. Then, it argues, Thing #2 is very similar, so the premise and conclusion should apply to Thing #2 as well. Depending on the situation, the comparison may not be apt, and pointing out Thing #2 differs from Thing #1 in ways relevant to the argument can expose an essential flaw.

OG example prompt: Obesity in humans and dogs ---- is the obesity problem in humans identical to the obesity problem in dogs? Is human metabolism similar enough to canine metabolism? (p. 811, bottom prompt)

Errors in Causality

Many arguments want to make the case that “A causes B.” Whenever the argument “A causes B” is presented, some alternative interpretations to consider are (1) the reverse, “B causes A”; or (2) “A and B are both caused by new thing C”, or (3) “A and B, for a variety of reasons, often appear together, but one does not cause the other.” (This last interpretation is summed up succinctly in the sentence: “Correlation does not imply causality.”) Learn to spot arguments that draw conclusions of causality, and questions whether that's the correct relationship.

OG example prompt: "the Cumquat Café" argument: is the old location "causing" the [illegible] for the three subsequent businesses? (p. 807, bottom prompt)

Basic Economics

You are not expected to know advanced economics for the GMAT AWA. You are expected to understand very basic economic facts, like the Law of Supply and Demand. Suppose an argument suggests that lowering a price would increase sales --- true, but the question is: would the price have to be lowered so much that it would obliterate any profits?

OG example prompt: "The country of Sacchar" ---- how much will it have to lower sugar prices? would selling sugar at that low price be worth it? (p. 806, third prompt)

Sampling Problems

Inferential statistics regularly uses information from a rigorously selected sample to draw a powerful conclusion about the larger population. That's great, and we are used to that. The problem is: authors will sometimes draw conclusions from samples that do not withstand analysis. "Conclusion X works for A, B, and C, so it should work for everything in the category"--- do A, B, and C adequately represent everything else in the category?

OG example prompt: "Avia Airlines" – do the few folks who filed a formal complaint constitute a fair representation of everyone who was in any way unhappy with the airline?? (p. 806, second prompt)

Overconfident Conclusions

If you read the *NY Times* or the *Wall Street Journal* or the *Economist* magazine, you will notice the kind of tone the GMAT favors: thoughtful, balanced, and measured. Extreme conclusions are seldom correct on the GMAT. Any AWA prompt that presents a conclusion with God-given certainty is too strong, and this is a flaw that needs to be addressed.

OG example prompt: Vista Studio's move sequel ---- the use of the word "undoubtedly" in the conclusion make that conclusion too uncompromising. (p. 814, top prompt)

Recognize the Common Patterns

If you become familiar with these patterns, and learn how to attach and expose each kind of flaw, then you will be much better prepared to analyze the argument in your AWA essay on test day.

Strategies for the AWA

Here are the tips that will support your success on the GMAT's AWA.

Recognize Unstated Assumptions

This skill is essential for the Critical Reasoning questions, and it will also serve you well on attacking the prompt argument in your AWA. You can read more about that skill here: http://magoosh.com/gmat/2012/arguments-and-assumptions-on-the-gmat/.

Know the Directions

This a matter not only of knowing what they say but also, more importantly, understanding the various options you have for analyzing the argument. This list of analytical strategies is always given in the paragraph that follows the prompt argument. It's important to get familiar with this "analytical toolbox", so it is yours to employ on test day.

Recognize the Common Flaw Patterns

GMAT AWA prompt arguments often contain one of six types of flaws (http://magoosh.com/gmat/2012/typical-flaws-in-awa-prompts/). Learn to spot these patterns, so you are ready on test day.

Plan Before You Write

This is obvious to some test-takers. Your first task is to find objections to and flaws in the prompt argument. Create a list of flaws. Then, select the 2-4 of those that are most relevant, that would be the most persuasive talking points. Once you have your list of insightful flaws, then you are ready to write.

Use a Template

Many test takers find it helpful to have the basic structure of the AWA essay already planned out and practiced, so it's just a matter of plugging in the specific details on test day. Here's an example of a possible template:

1. Paragraph #1: state that the prompt argument is flawed. Briefly enumerate the flaws you will examine, in the order that you will discuss them.

2. Paragraph #2 (or #2 & #3): Sticking to that same order, analyze each flaw in detail, explaining your reasoning why each is a serious weakness of the argument.

3. Last paragraph: Suggest improvements, which are the reverse of the flaws (i.e. argument would be considerably stronger if it did such-and-such to remove flaw #2 by restating that is it a weak argument.

Feel free to adapt this template as is, modify it, or create one of your own.

Write with Variety

First of all, vary your sentence structures. Here are some examples of different structures.

1. Simple sentence, one independent clause: *Jack went to town*.
2. Sentence with two independent clauses: *Jill went to town and Jack stayed home*. (Two independent clauses can be joined by "and", "or", "but", "yet", "so", etc.)
3. Sentence with an independent clause and one (or more) dependent clauses: *Jack went to the town where Jill lives*.
4. Sentence with an infinitive phrase: *Jack went to that town to see Jill*.
5. Sentence with a participial phrase: *Hoping to see Jack, Jill went to town*.

A good essay might never have two sentences in a row with the same structure.

In addition to variety in sentence structure, strive for variety in word choice. Of course, you will want to echo words that appear in the prompt argument. But in your own analysis, vary the descriptive words, never using the same word twice. Don't say "weak … weak … weak" when you can say "unpersuasive … untenable … questionable." Well-chosen synonyms can make an essay shine.

Proofread! Proofread! Proofread!

When you proofread, you have to consider several levels simultaneous: Is every word spelled correctly? Is every structure grammatically correct? Does the argument logically flow? Unfortunately (or fortunately!) you are not allowed to read your essay aloud in the testing center. What I do recommend, though: silently mouth the words, as if you are carefully pronouncing each word, even though you are not making any sounds. When you move your mouth & tongue, you are engaging more of your brain than when you are simply reading silently with your eyes, and you are more likely to catch subtle mistakes.

Integrated Reasoning

Introduction to Integrated Reasoning

What, Exactly, is Integrated Reasoning?

"Integrated reasoning" is GMAC's term to describe questions that combine (i.e. "integrate") skills that previously had been strictly divided between the Quantitative and Verbal sections. IR questions can demand careful reading and analytic skills, such as one uses on Reading Comprehension and Critical Reasoning questions in the Verbal section, as well as mathematical skills, especially data interpretation and reading graphs & charts.

When Was the IR Section Introduced on the GMAT?

The IR first appeared on June 5, 2012, with the introduction of the "Next Generation" GMAT.

Why Does the GMAT Ask IR Questions?

In our modern electronic culture, we all experience a blitzkrieg of information. Everyone has more information coming at them than they can handle. One of the principal skills needed in the modern world, and especially in the modern business world, is the ability to make sense of information in a variety of form and to extract from it the kernel of relevance.

In the real business world, there is not a separate "Quantitative Section" or "Verbal Section." Words & facts & numbers & graphs & charts all come together, and we have to make sense of how they all connect and interrelate. The business schools with which GMAC consults felt that old test format never asked students to combine verbal & numerical skills at once, and this basic criticism led to the development of the IR section.

Graphs and charts are particularly prevalent on the IR questions because, as any geek knows, they allow us to pack an extraordinary amount of information in a compact format. It would be a rare issue of the NYT or WSJ that doesn't have a graph or chart somewhere amongst its pages. For better or worse, graphs and charts present efficient ways to organize information, and they are all over the business world. That's why GMAC felt it was important to focus on them.

Quick Facts about the GMAT's IR section:

1. 30 minutes
2. 12 questions (most individual "questions" actually have 2-3 questions within them)

3. IR is not Computer Adaptive: the bank of 12 you get is fixed, and does not adjust according to whether you are getting them right or wrong

4. There is no partial credit on the IR section: you must get every part of the question right in order to receive credit.

5. The four IR question types are: (1) Multi-Source Reasoning; (2) Table Analysis; (3) Two-Part Analysis; and (4) Graphic Interpretation. The abbreviations for these are, respectively, MSR, TA, 2PA, and GI. Each question type has its own on-screen layout.

The 4 IR Question Types

Multi-Source Reasoning

- Split Screen
- On the left side a window with two or three clickable cards. These cards contain the information that will be relevant to answering the question. You can view only one card at a time.
- On the right side, the questions. You will only see one question at a time, and once you submit your answer to a question, you cannot go back. There will be two kinds of questions in the MSR section

Types of Questions

1. Ordinary five-choice Multiple Choice, exactly like the GMAT Problem-Solving questions or any of the question in the GMAT Verbal section

2. Multiple Dichotomous Choice: in a single MDC question there will be three individual questions and only two answer choices from which to select (e. g “true/false”, “improve/detract”, “make money/lose money”, etc.). In other words, for each of the three questions, you have a dichotomous choice: just two possibilities. You must answer all three correctly to get credit for this MDC question, as there is no partial credit on the IR section.

The Nature of the Information in MSR

Some of these questions are intensely verbal: for example, three parts of a conversation or an email exchange. Others are more numerical: for example, one card might describe the overview of a scenario, and the other two cards will give numerical parameters informing aspects of the scenario. The card that introduces the scenario may define relevant jargon or relevant abbreviations, and then the other cards will use that jargon or those abbreviations in context. The information on the three different cards can interrelate in any one of a number of ways. Again, you will be free to click back and forth among the three cards as much as you like, but at any moment in time, you will be looking at only one of the three: you cannot view cards simultaneously.

MSR Strategy Tips

Don't Be Intimidated

The question is intended to be challenging, and in all likelihood, the context will be minimally familiar or completely unfamiliar. Relax. No matter how new or foreign it may appear, everything you need to answer the question is given.

Map, Don't Memorize

In Reading Comprehension, you do not need to memorize every detail of a passage: your the first reading is to extract the main idea and the topic of each paragraph: this gives you "map", and when you get to a detail question, you will follow your "map" back to the relevant section. That is very much what you will do with MSR question. You don't need to memorize: you do need to figure out (a) where the pieces of information is located, and (b) how information given on one card influences or plays into information given on the other cards.

Be careful to distinguish what must be true from what could be true.

Make sure you verify the answer to each question with concrete information on the cards.

Table Analysis

- A "sortable" table of numbers --- the table will have multiple columns, and you will have the ability to sort by any column, so that is shows that column in increasing or decreasing order.
- There may be verbal information, before or after the table, describing or clarifying something about the table
- All the TA questions are "Multiple Dichotomous Choice" questions. That is, for each TA question, there will be a prompt and then three individual questions and only two answer choices from which to select (e. g "true/false", "yes/no", "wins/loses", etc.). The prompt can be quite wordy, delineating precise specifications. You must get answer all three prompts on the page correctly to earn credit for the question, as there is no partial credit on the GMAT IR.

The Nature of the Information in TA

This is relatively straightforward. One column of the table may be a verbal identifier (e. g. the name of each country), but the other columns will be numerical. The numbers can be numerical values of a variable, or ranks, or percentages, or percentage increase/decrease.

TA Strategy Tips

Understand the nature of the numbers in each column and their interrelationship

Some column-heading will provide completely self-evident descriptions, but if accompanying text appears, you will need to read that carefully to determine the exact meaning of at least some of the columns.

Understand the comparison in percent changes.

If one column is percent increase or percent decrease, make sure you understand what the "starting" point was and what the "final" value was. This will often be clarified in the prompt.

Understand the Value of Ranks

Sometimes, in addition to the numerical value of a variable, you will also be given the "rank" of each line in terms of that variable. This can provide a number of valuable insights. For example, if two lines have adjacent ranks, then no other member, mentioned in the table or omitted, can possibly have a value of the variable between those two values. For example, say, C has variable = 152 and rank = 8, and F has variable = 98 and rank = 9; then, no member may have a value of the variable between 98 and 152. Alternately, if some ranks are missing, then you know how many members are missing in that exact range. For example, say, C has variable = 152 and rank = 8, G has variable = 174 and rank = 5, and the ranks 6 & 7 do not appear on the table: then we know there are exactly two values that do not appear between 152 and 174.

Two-Part Analysis

- A sizeable prompt will outline the scenario. Any variables required will be defined in this prompt.
- The question consists of a table of the following form:

Question #1	Question #2	
		Answer #1
		Answer #2
		Answer #3
		Answer #4
		Answer #5

Questions are will be partially or completely related and interdependent. You will mark the answer for column #1 in the first column and the answer for column #2 in the second column. It is possible, in some scenarios, for both questions to have the same correct answer. You cannot mark more than one answer in any column. You must get both columns correct to earn credit for the question, as there is no partial credit on the GMAT IR.

The Nature of the Information in 2PA

The 2PA question format is extremely versatile: the information can be either c
mathematical (numerical or algebraic) or completely verbal.

The algebraic 2PA questions are quite similar to Problem Solving questions involving variables in the answer choices (VICs). The prompt will be just slightly more involved than comparable PS prompt, and then two questions, rather than one, will be asked about that prompt.

In the numerical 2PA questions, the two numbers might be, for example, the solution values of two related variables, or two percentages that satisfy some specified condition. These are also similar to PS problems with numerical answer, except two questions are asked.

The purely verbal 2PA will typically present a paragraph-long prompt, perhaps involving technical terminology, and then the questions will pose two related tasks: first step + second step; biggest advantage + biggest liability; satisfies all conditions + satisfies none of the conditions; something gained + something lost; etc.

2PA Strategy Tips

Determine the Relationship of the Two Questions

Sometimes the two questions will be relatively independent or only tangentially related. Other times, how you answer one question will have direct unavoidable implications for how you answer the other.

For Algebraic 2PA, Review Strategies for VICs in the PS Section

Remember, you can always use pure algebra, or you can plug in different numbers for the different variables (intelligent choices!) and eliminate answers that way.

For Numerical 2PA, Review Strategies for the PS Section

You always will be able to solve directly, often using algebra or some formula, and you almost always have the option of back testing from the answers provided.

For Verbal 2PA, Read the Questions First, and Read the Entire Prompt Carefully.

Read the questions first, so you know exactly the kind of information that will be relevant, and read with that in mind. Pay attention to what must be true, what could be true, and what absolutely can't be true.

Graphic Interpretation

- This type has by far the widest variety of possible ways in which the information can be presented. All information will be presented visually, in a graph or a chart. The information may be a pie chart, a bar chart, a column chart, a line graph/timeplot, a scatterplot, a bubble graph, an organizational chart, a flow chart, or a floorplan/map
- Often there will be at least a small verbal prompt accompanying the graph or chart, and sometimes a detailed verbal explanation is given.
- One part of one chart may be detailed by another chart: for example, a single column in a column graph might be shown broken down into subdivisions in a pie chart.
- All GI questions involve drop-down menus. The question prompt will be a sentence, and at some point in the sentence there will be a gap; in the gap will be a drop down menu with 3-4 choices. For example: “The hospital's debt increased by [drop-down menu] percent in 2005” (obviously, that particular drop-down menu would have percent values). Each GI question typically will have one or two sentence prompts, always with a total of two drop-down menus. You must get both correct to earn credit for the question, as there is no partial credit on the GMAT IR.

The Nature of the Information in GI

Most graphs display numerical information in visual form. The various graphs (pie, bar, column, line, scatterplot, and bubble) will account for more than 90% of all GI questions. Organizational charts will be rare: they typically show, in visual form, the power relationships, the pecking order, in an organization. Flowcharts will be rare: they map out, in visual form, the sequence of steps needed to accomplish some end, with alternatives specified at various decision points.

GI Strategy Tips

Estimate!

Estimation is a vastly underrated skill throughout the Quantitative Section, and it is crucially important on GI. You need not read the precise value on the graph if the value is, for example, between ticks --- as a general rule, getting in the right ballpark will be enough to determine the correct answer. If you see the words “is nearest to”, “is closed to”, etc., that's a clear invitation to estimate.

Get Familiar with the Graph Types

Practice reading the various graph types: get acquainted with what each graph does and doesn't show. Practice reading graphs --- in the *Economist* magazine, in the *Wall Street Journal*, in the *New York Times*; any graph that appears in those news sources is an exemplar of what could appear on the GMAT.

Read All Text Carefully

Any verbal information that comes with the graph should not be skimmed: read it word word, as carefully as possible. Look very carefully at how the graph is labeled (title, axis la etc.) --- for example, it is in amounts or percentages? If there are different marks or differen colored dots on the graph, make sure you understand what each one means.

Don't Be Afraid of the Simple Answer

Graphs, by their very nature, make complicated numerical relationships easy to see. That's precisely why we techy nerds love graphs. Sometimes, when you unpack what the question is asking, what it really wants you to do is something ridiculously simple (e. g. count the dots in a certain region of the graph). Don't automatically assume you are doing something wrong just because it's something a third-grader could do! That's the nature of graphs! The math is there to see!

How the IR Differs from Quant & Verbal

Think about what distinguishes an effective manager from a pencil-pusher. The dutiful pencil-pusher can verify: A is a fact, B is a fact, and C is a fact. The effective manager can say, well, we know A & B & C, it would not pay to do G, but it would be beneficial to pursue M, and it's even worth the risk to pursue W. Lots of folks can verify information. Good managers can integrate and synthesize information, weight costs and liabilities, and come up with bold decisions for courses of action to take. That very aptly describes what the IR section is designed to assess.

Foundational Skills

In terms of foundations skills, what you need to know for Integrated Reasoning is not really different from what you need to know for the Q & V sections. You need to know basic math, especially percentages and ratios, and you need to be able to interpret word problems. You need to know how to read graphs. You need to read critically and interpret, much as you do on CR and RC questions. These are the basic skills absolutely required to negotiate the IR section, but they are not really what the IR is designed to test.

Higher Order Reasoning

The IR section is designed to assess higher order reasoning. These skills include:

1. Integrating information, including organizing and synthesizing different kinds of information.
2. Evaluating sources of information, or evaluating tradeoffs and possible outcomes of a course of action.
3. Drawing inferences, making predictions, identifying what further conclusions are supported by the given data.
4. Interrelating information, seeing how parts fit together in context.
5. Formulating strategy, deciding among possible plans of action.

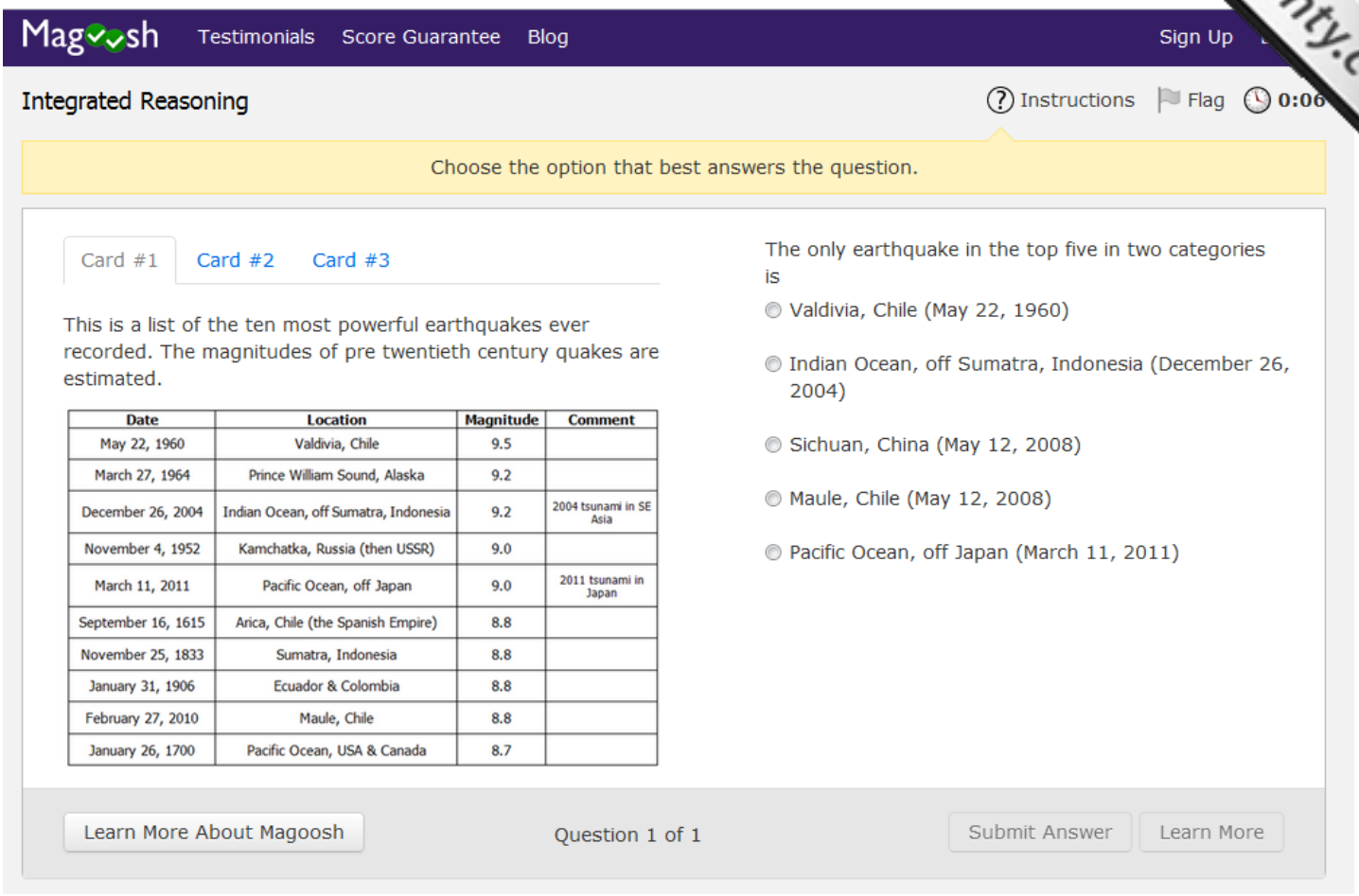
These are all skills that managers need for success in the business world. These are skills that business school professors reinforce and assess. This is precisely why hundreds of business school faculty from around the world provided GMAC with the feedback that led to the creation of the IR section.

Relish the Challenge!

Yes, there are challenges associated with the new IR section. Ultimately, the challenges of the IR section are closely related to the challenges you will experience in business school and as a manager in the business world. These challenges, these opportunities to apply your creativity and insight to complex problems, are part of what make the business world engaging, even exhilarating, for folks. This is the exciting world you are entering, and it starts for real when you

sit for the “next generation” GMAT and face the IR section. Do everything you can to p
that when you face the IR section, you can bring your best to the challenge.

Practice Question



Try this question online and watch the video explanation:
http://gmat.magoosh.com/questions/2307

Quantitative

Introduction to GMAT Quantitative Section

According to a poll in the last ten years, 40% of American adults say they hated math in school. No doubt there are others who, while not using a word as strong as “hate”, still don't have a passionate fondness for math. Yet, if you want to take the GMAT, you have to be sharp on a good deal of math.

If you already have any warm and fuzzy feelings for math, you have a great edge over much of the general population. If for you the word “math” evokes fear, anxieties, or doubts about your abilities, this article is a pep talk for you.

Why Does the GMAT Have a Quantitative Section?

The GMAT is a test that helps folks get into business school, into MBA programs. Of course, folks get MBAs so they can get management jobs in the business world. The point of any business, fundamentally, is to make money. Where there's money, there are numbers. It's a simple as that. If you are going to spend your life in the business world, there will be numbers and percentages and other mathematical concepts around you your whole life. It's true that when you are a top dog, you can always pay some brilliant nerd to crunch the more complicated numbers for you, but you have to have a basic sense of numbers to keep your pulse on any business. That's why fundamental math is important. That's why the GMAT asks about it. That's why we need to face math.

Fast Facts about the GMAT Quantitative Section

- 75 minutes
- 37 questions
- two question formats: (a) Problem Solving, and (b) Data Sufficiency

You Can Be Successful at Math

By the very fact that you are reading this and preparing for the GMAT, I am going to assume (a) you have finished, or are about to finish, a college degree, and that (b) you either are working now, or about to begin working, in some job where they demand at least some basic level of competence from you. In other words, to be quite blunt: you are not dumb. You have achieved worthwhile goals in your life so far, and you stand an excellent chance of continuing to achieve new ones --- such as earning an MBA, for example.

All the time, I hear highly intelligent people say, “Oh, I can't do math. I was never good at math.” It simply can't be that high school math is entirely beyond the abilities of 80% of college graduates.

I have this theory that, for whatever reason, math education in the USA has convinced a portion of the population that they don't have any talent for math even though they do. I know if it's the fault of the teachers, the textbooks, the college admission process, etc. I just the result is: many bright people who, with the proper reacquaintance, could be successful with math have already emotionally psyched themselves out on this subject.

Believe in yourself. You can do this. Magoosh can help!

Why Math *Seems* Hard

Math can seem unforgiving. Here's what I mean. Suppose you have to write an essay on a 10-line poem. If you understand the poem inside-out, that's great, but suppose there's one word in one line you just don't know. Chances are, you would be able to work around that and still write a reasonably competent essay about the poem. In many disciplines, you can miss one thing and still shine.

Now, instead of a poem, suppose someone has to solve a math problem that requires ten steps. If that person is flawless on nine of those ten steps, but on one step, she forgets one piece. That will be enough to mess up the answer. She will get the answer "wrong", and for most people, that sends the message, "You don't understand." You miss one little thing, and it's as if the math simply nails you for it. Notice: this hypothetical problem-solver was actually flawless on nine of the ten steps. In other words, she actually knows a lot of math. Yes, it will be important to clear up the concept on the step she missed, but it's very important for her, and for you, to take credit for knowing a good deal of math, even when the answer is "wrong." That is hugely important in the learning process.

Another reason math can seem hard is that it's like a language in that success on more challenging problems requires fluency. If you have ever learned a language beyond your native tongue, you probably recognize how effortless the new language can be when you are fluent, but how much of a gut-wrenching struggle it can be when you are uncertain of half the words or grammatical forms.

Let's say, to solve a certain problem, you need to recall Concept A, Concept B, and Concept C ---if you have all three of those concepts at your fingertips, they problem is easy. If you recall Concept A and Concept C, but not Concept B, the problem may well be intractable. Probably if someone reminds you of Concept B, you will say, "Oh, yes, I know that." Again, don't label yourself as "bad at math" because you were not fluent in all the concepts you needed; that's like concluding you are "bad at French" if you are not fluent after two weeks of learning it! It's just not fair! As with a language, fluency is a matter of consistent practice. The freaky math people can look at a concept once and never forget it. Most normal people have to be reminded several times before that concept moves from passive to active memory. Give yourself a break on the harsh judgments, and just do the consistent practice.

Finally, math has this odd Jekyll and Hyde quality: When you don't see what to do in a problem, it appears completely impossible; but when you see what to do, it often seems easy. When a student is rusty with math, he feels frustrated one problem after another because they seem impossible, and then that is compounded when he sees the solution and it looks easy. Again, people incorrectly draw the conclusion, “Look, I'm stumped even by the easy ones. I must be bad at math.” I'd like to suggest an alternate interpretation. When you are stumped by a problem, remind yourself that probably there's just one concept, probably one you already know, that will unlock the problem and make it easy. As you practice consistently, and increase your fluency, it will be easier to remember those magical key concepts. Also, recognize that the bizarre “impossible”/”easy” split does not reflect anything about your abilities, but reflects something inherent to math itself. Don't take it personally ☺.

Breakdown of Quant Concepts by Frequency

We went through 5 different sets of Official GMAT Practice Material and tallied questions ba
the subject material they tested.

Here are the samples of Official Material used:

1. GMAT Official Guide (12th Edition) Problem Solving Practice Questions (Pg. 152-265)*
2. GMAT Official Guide (12th Edition) Data Sufficiency Practice Questions (Pg. 272-351)*
3. GMATPrep Test #1
4. GMATPrep Test #2
5. Released past exam from GMAC, test code 14, from the 90s/early 2000's

Below, we rankings broken down by concept type for all of the material combined, as well as a master chart that ranks the frequencies of all the material combined.

Breakdown by concept type, all material

		Total	Percentage
Arithmetic	Properties of Integers	65	13.83%
	Fractions	19	4.04%
	Decimals	10	2.13%
	Real Numbers	2	0.43%
	Ratio & Proportions	23	4.89%
	Percentages	41	8.72%
	Powers & Roots of Numbers	14	2.98%
	Descriptive Statistics	39	8.30%
	Sets	8	1.70%
	Counting Methods	12	2.55%
	Discrete Probability	8	1.70%
Algebra	Simplifying Algebraic Expressions	13	2.77%
	Equations	3	0.64%

	Linear Equations, One Unknown	11	2.34%
	Linear Equations, Two Unknowns	26	5.53%
	Solving by Factoring	1	0.21%
	Solving Quadratic Equations	3	0.64%
	Exponents	16	3.40%
	Inequalities	16	3.40%
	Absolute Value	1	0.21%
	Functions/Series	15	3.19%
Geometry	Lines	2	0.43%
	Intersecting Angles and Lines	3	0.64%
	Perpendicular Lines	0	0.00%
	Parallel Lines	0	0.00%
	Polygons	1	0.21%
	Triangles	13	2.77%
	Quadrilaterals	7	1.49%
	Circles	14	2.98%
	Rectangular Solids & Cylinders	8	1.70%
	Coordinate Geometry	15	3.19%
Word Problems	Rate Problems	20	4.26%
	Work Problems	6	1.28%
	Mixture Problems	3	0.64%
	Interest Problems	9	1.91%
	Discount	4	0.85%
	Profit	4	0.85%
	Sets	7	1.49%
	Geometry Problems	1	0.21%

	Measurement Problems	5	1.06%
	Data Interpretation	2	0.43%
Total		470	100.00%

Ranked by frequency, all material

		Total	**Percentage**
Arithmetic	Properties of Integers	65	13.83%
Arithmetic	Percents	41	8.72%
Arithmetic	Descriptive Statistics	39	8.30%
Algebra	Linear Equations, Two Unknowns	26	5.53%
Arithmetic	Ratio & Proportions	23	4.89%
Word Problems	Rate Problems	20	4.26%
Arithmetic	Fractions	19	4.04%
Algebra	Exponents	16	3.40%
Algebra	Inequalities	16	3.40%
Algebra	Functions/Series	15	3.19%
Geometry	Coordinate Geometry	15	3.19%
Arithmetic	Powers & Roots of Numbers	14	2.98%
Geometry	Circles	14	2.98%
Algebra	Simplifying Algebraic Expressions	13	2.77%
Geometry	Triangles	13	2.77%
Arithmetic	Counting Methods	12	2.55%
Algebra	Linear Equations, One Unknown	11	2.34%
Arithmetic	Decimals	10	2.13%
Word Problems	Interest Problems	9	1.91%

Arithmetic	Sets	8	1.70%
Arithmetic	Discrete Probability	8	1.70%
Geometry	Rectangular Solids & Cylinders	8	1.70%
Geometry	Quadrilaterals	7	1.49%
Word Problems	Sets	7	1.49%
Word Problems	Work Problems	6	1.28%
Word Problems	Measurement Problems	5	1.06%
Word Problems	Discount	4	0.85%
Word Problems	Profit	4	0.85%
Algebra	Equations	3	0.64%
Algebra	Solving Quadratic Equations	3	0.64%
Geometry	Intersecting Angles and Lines	3	0.64%
Word Problems	Mixture Problems	3	0.64%
Arithmetic	Real Numbers	2	0.43%
Geometry	Lines	2	0.43%
Word Problems	Data Interpretation	2	0.43%
Algebra	Solving by Factoring	1	0.21%
Algebra	Absolute Value	1	0.21%
Geometry	Polygons	1	0.21%
Word Problems	Geometry Problems	1	0.21%
Geometry	Perpendicular Lines	0	0.00%
Geometry	Parallel Lines	0	0.00%

The Categories

The list of concepts tested on the quantitative section is from GMAC, which you can see on page 107 of the Official Guide (either 12th or 13th edition). It isn't perfect– "Integer Properties" is a wide area of knowledge, whereas something like "Circles" is very specific.

Observations

- Based on the master chart alone, Arithmetic is the clear "winner", while Word Problems and most Geometry question are ranked much lower.
- Though the rankings vary slightly from chart to chart, there are no extreme outliers in terms of the sets of data– even the old released exam is quite consistent with all of the other exams.

"Well, I guess I'll just throw parallel/perpendicular lines out the window, then."

NO. For the sake of simplicity and accuracy in reporting absolute frequency, we've only assigned each question to one concept. This means that even though GMAC lists "Perpendicular lines" as a topic tested on the GMAT, and we have 0 questions marked as pertaining to that topic, that certainly doesn't mean the idea of perpendicular lines did not come up at all on all of the exams. It certainly appeared, but often in questions that were better categorized, overall, as "Coordinate Geometry", or "Intersecting Angles and Lines".

Takeaways

We hope this serves as a guideline for the relative frequency of math topics tested on the GMAT to help you decide how to focus your time! In Magoosh practice, you can set up customized practice sessions to focus on specific concepts, as well as review your performance on individual concepts to identify your weak spots using our Review tool.

Introduction to GMAT Problem Solving Questions

Use this familiar question format to your advantage!

Plain Old Multiple Choice

What the GMAT calls “Problem Solving” is just ordinary 5-choice multiple choice. Probably, this question format is quite familiar. In fact, I think it would be impossible to get to the point of graduating college without ever having seen this question format. SATs, ACTs, AP Tests, exams in large lecture classes in college, etc. all make extensive use of this format.

Of course, the best single strategy for PS success is to learn the math, and the sure way to improve your understanding of math is to practice, practice, practice. I'll assume you are going to do that as part of your prep. In addition to consistent math practice, here are some other strategies you can employ on the GMAT PS.

Backsolving

When the five answer choices are numbers, and you are not sure how to begin or set up the problem, you can always backsolve: that is, start by assuming, for each answer, that it is the correct choice and then work backwards from that to see if it is consistent with the constraints of the question.

Here's a sample question solved with backsolving.

1. A positive number x is multiplied by 7 and then divided by 3, and then we square the result. If the outcome of all these three steps equals x, what is the value of x?

   A. 3/7
   B. 7/3
   C. 3/49
   D. 9/49
   E. 49/9

To backsolve, I am going to start with each answer, and apply that procedure to see where it goes.

possible answer	times 7	divided by 3	squared	comment
$\frac{3}{7}$	3	1	1	no good
$\frac{7}{3}$	$\frac{49}{3}$	$\frac{49}{9}$	yuck!	no good
$\frac{3}{49}$	$\frac{3}{7}$	$\frac{1}{7}$	$\frac{1}{49}$	no good
$\frac{9}{49}$	$\frac{9}{7}$	$\frac{3}{7}$	$\frac{9}{49}$	BINGO!
$\frac{49}{9}$	$\frac{49*7}{9}$	$\frac{49*7}{9*3}$	yuck!	no good

Notice, I didn't even get involved with calculations beyond what would be on a single-digit times table, and it was enough to isolate **D** as the answer.

Plugging-in Values

If the answer choices are all numbers, one possible strategy is to backsolve. If the answer choices are in terms of variables, you can use algebra to solve the problem in a "forward" manner, or you can choose numbers for the variables in both the question and in the answer choices, and solve it as a numerical problem.

Let's say there are three variables in the problem. As a general rule, it's a good idea to pick a different prime number for each variable. Always avoid 1 as a plug-in value, because if z = 1, then y and yz^2 have identical values. If two of the answer choices equal each other for certain plug-in values, that's a good sign to choose different plug in values.

Solution Behavior

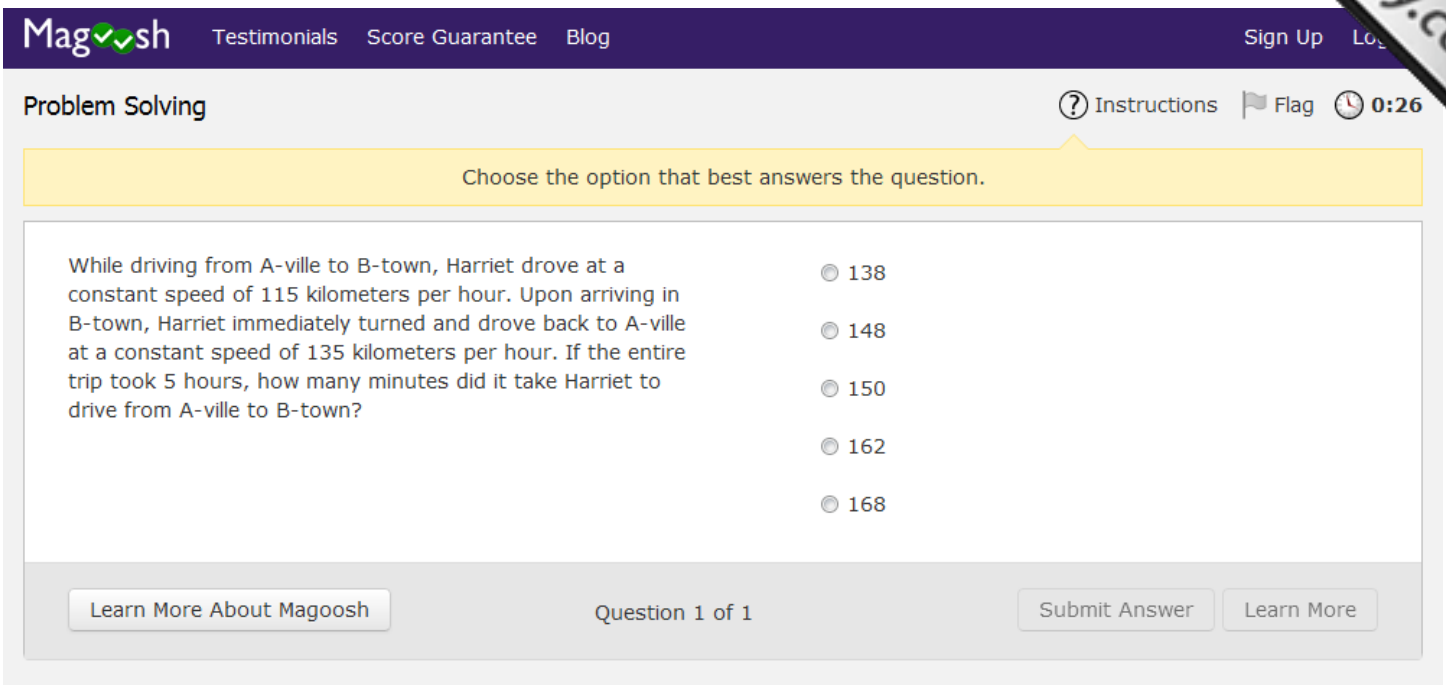
This is GMAC's own term for a particular strategy. Suppose you can't solve a problem to completion, but you have done enough work to eliminate two or three answers as incorrect. If you guess randomly from among the remaining answers after having eliminated some as impossible, that is called "solution behavior."

If you guess random from all five answers, on average this will not increase your score: the wrong answers will neatly cancel the few right answers. BUT, if you can eliminate even only one answer, this increases your odds of coming out ahead in points when you guess from the remaining answers.

The more answers you can eliminate, the more likely you are to gain points by random[illegible] from among the remaining answers. This may be anti-intuitive, but it is borne out by care[illegible] probabilistic analysis.

It's very important to recognize: even if you can't solve a question, as long as you can intelligently eliminate some of the answer choices, you are working toward an increased score on the GMAT.

Practice Question



Try this question online and watch the video explanation: http://gmat.magoosh.com/questions/26

Introduction to GMAT Data Sufficiency

The Old School Approach: Find the Answer

Probably, out of all the math you have done in your entire pre-GMAT life, the goal has been to find the answer. In grade school math, high school math, and introductory college mathematics, you are tested and graded on your ability to find the specific numerical answer to a question. If you happened to have gotten any advanced degrees in mathematics, you know that the find-the-answer mentality as well as numbers in general quickly recede as you ascend into the realms of higher mathematics.

For the vast majority of people, though, all of us who did not choose to get college or graduate degrees in abstract mathematics, the last math that we learned prior to encountering GMAT studies in all likelihood still revolved around find-the-answer.

Data Sufficiency: Beyond "find the answer"

GMAT Data Sufficiency requires you shift your paradigm. Fundamentally, in the Data Sufficiency questions, unlike in your previous math classes, you are not being asked to find the answer. Rather, you are simply being asked the question: do you have enough information to answer the question? In other words, if you wanted to, or had to, figure out the answer, would you have enough information to do so?

Data Sufficiency and the Managerial Mindset

Why does the GMAT ask Data Sufficiency questions? First of all, Data Sufficiency tests your ability to gauge relevance – if I want to know A, is it relevant to know B? It certainly conceivable that, in the real business world, if you want to know the price or cost or value of one thing, it will be important to be able to figure out whether knowing the price or cost or value of another thing would be relevant.

At a deeper level, think of the difference of these two questions: (1) what is the actual answer to problem X? vs. (2) do we have enough information to answer problem X? The first question may involve specific expertise, depending on the nature of the problem, and may well be delegated to, for example, an engineer. The second question is more quintessentially the manager's question, the manager who sees that the problem can be solved and delegates it appropriately.

Insofar as you are planning to take a GMAT and go to business school, you are planning a career as a manager, which is all about delegating, about decision-making, about discerning what paths are fruitful for exploration and what paths don't merit examination. In this sense, I would argue that GMAT Data Sufficiency tests skills that are at the very heart of what it is to be a powerful and effective manager.

Introduction to the Data Sufficiency format

If you are new to this question, take heart! It will take a little practice to familiarize yours
the format, but once you gain experience, you will see that GMAT Data Sufficiency is no hard
than ordinary problem solving, and in some cases, it's considerably easier.

General Strategy for Data Sufficiency Questions

If you are approaching this usual question for the first time, here are tips to guide you in approaching it.

Two Types of DS Questions

The first thing to appreciate: there are two broad categories of DS prompt questions: (i) yes/no questions, and (ii) value questions.

Examples of yes/no prompts:

1. Does x = 6?
2. Is t < 7?
3. Is angle ABC a right angle?
4. Is M at least 70% of N?

Examples of value questions:

1. What is the value of x?
2. What does t equal?
3. What is the measure of angle ABC
4. M is what percent of N?

When answering a DS question, the first thing to determine is whether it is a yes/no or value question, because the nature of the task is very different in either case. A yes/no question, by definition, has only two possible answers, while a value question, before constraints are applied, typically has an infinity of answers.

In Value Questions, Don't Overcalculate

Consider the following DS question:

1. What is the value of 1/(x + 4)?

   Statement #1: 4.375x – 6.25 = 11.25

   Statement #2 = $\frac{1}{x+8} - \frac{1}{48} = \frac{1}{16}$

Many people will spend way too long on this question, which can be answered in about seconds. First of all, the prompt: in order to find the value of 1/(x + 4), we would need to value of x, so really, the question "what is the value of 1/(x + 4)?" is, from a sufficiency standpoint, entirely equivalent to the question "what is the value of x?" When we can answer either question, we would be able to answer the other. So, which statement allows us to solve for x?

Statement #1 is a one-variable equation which, when solved, will have a unique answer for x. Done. We don't need to solve: all we need to do is determine: could we solve. We could solve for x, so Statement #1 is sufficient.

Statement #2 is similarly a one-variable equation which, when solved, will have a unique answer for x. Done. Again, we don't need to solve. We could solve for x, so Statement #2 is sufficient. Answer = **D**

Both of the statements are tricky equations, and if someone undertook to solve them for the value of x, that would easily eat 5-10 minute for a question that should take well under a minute.

Always remember your task on DS: it's not to find the answer to the target question, but merely to determine whether you could find the answer.

In Yes/No Questions, Be Careful

Consider this highly simplified DS question.

2. Does x = 5?

   Statement #1: 5x = 15

   Statement #2: x + 1 = 4

You are trying to answer the sufficiency question: Does each statement give sufficient information to determine a definitive answer to the prompt question? If you can answer with a definitive "yes", then you have sufficient information, BUT if you can answer with a definitive "no", you also have sufficient information. Some people confuse a "no" answer to the prompt question with a "no" answer to the sufficiency question. Here, it's clear from both statements that x = 3, that it in fact does not equal 5. So the answer, for both statements, is a clear "No" ---- that's the answer to the prompt question. Because we were able to get a clear answer to the prompt question from each statement, that means each statement, individually, was sufficient ---- an affirmative answer to the sufficiency question in both cases ---- and the answer is **D**.

For Yes/No questions, you are looking for a definitive answer, a clear "yes" or a clear **statement that allows you to determine a clear answer of any sort to the prompt ques sufficient**.

Consider the Statements Individually

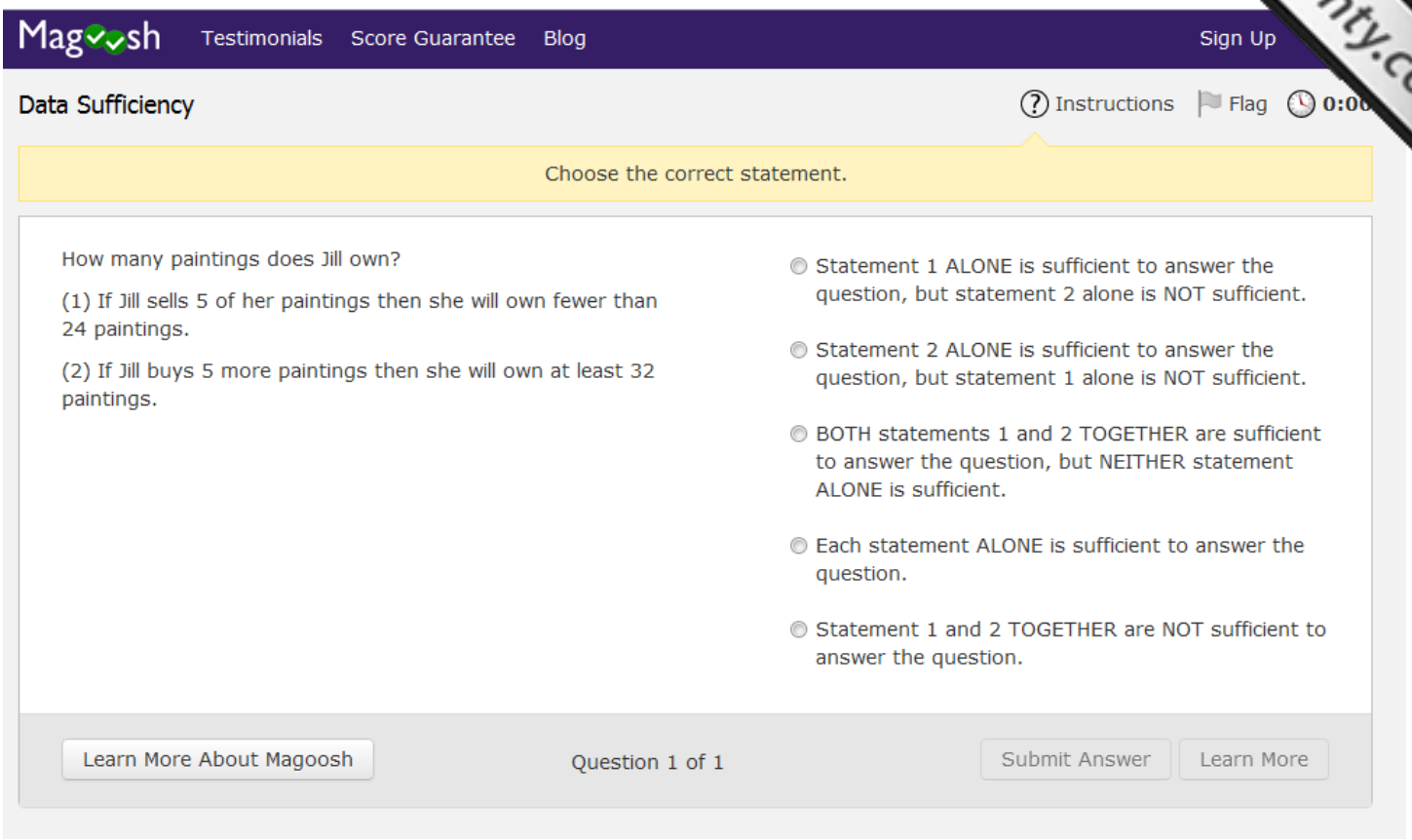
This strategy holds for both types of prompt questions, yes/no questions and value questions. If one of the two statements is considerably more complex, often the test maker will put that statement first. Why?

Suppose you start considering the implications of Statement #1, and you do a number of calculations or deductions concerning it. When you are done considering Statement #1 by itself, there will be a natural tendency to make the mistake of carrying some or all of that work with you into Statement #2.

When you consider Statement #1, you must consider it by itself, just the prompt question and Statement #1, nothing else. When you consider Statement #2, you must consider it by itself, just the prompt question and Statement #2, nothing else. If you spend a good deal of time or energy on Statement #1, it might be helpful to go back, read just the prompt, and then jump to Statement #2, to remind yourself: now that I am considering Statement #2, I must completely forget Statement #1 and all its implications.

The only time you consider both statements together is after you have determined each statement, by itself on its own, is insufficient; at that point, you are trying to determine whether the answer is (C) or (E). Then, and only then, you can combine the information from both statements. But the first consideration has to be considering each statement alone, by itself, on its own.

Practice Question



Try this question online and watch the video explanation:
http://gmat.magoosh.com/questions/923

GMAT Math: Memory vs. Memorizing

A Case Study of the Area of an Equilateral Triangle

Fact: on the GMAT Math section, you are likely to find questions about the area of an equilateral triangle, and it would be efficient if you knew the formula. (BTW, the formula appears a little further below.)

Don't Merely Memorize

I am going to recommend that you work to remember this formula, rather than memorize it. What distinction am I drawing? By memorizing, I mean you write this isolated factoid, area of an equilateral triangle, on an index card, and drill yourself until you can successful regurgitate it. That's one way to get something into your memory, but it's hard to retain it, particularly over the long term. One big problem is: on the day of the test, because of increased stress, if you forget the factoid you previously could regurgitate, you are stuck: you have no recourse.

Memory with Contextual Understanding

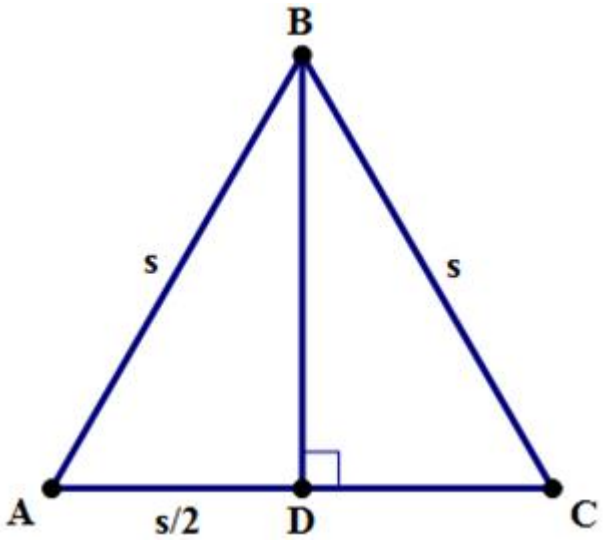
By contrast, true learning involves remembering something because you understand it. When you understand every step of an argument and how it fits together, that makes it very easy to remember. This is particularly true in mathematics: if you can remember the series of steps that lead to a conclusion, first of all, such learning makes the conclusion much easier to remember; furthermore, even if you can't remember the conclusion or want to check it, you will probably remember enough of the argument that you can reconstruct it if need be. This is a much deeper kind of understanding.

Example: The Area of an Equilateral Triangle

Suppose you have an equilateral triangle with sides of length **s**. We know all the sides have the same length. It's not relevant for finding the area, but we also know that all three angles equal 60 degrees.

Step #1: We know that the formula for the area of a triangle is $A = \frac{1}{2}bh$. The base is clearly s, but we need a height.

Step #2: We draw an altitude, that is, a line from B that is perpendicular to AC. The length of this line is the height needed in $A = \frac{1}{2}bh$.



Step #3: Point D is the midpoint of AC, so AD = s/2. Also, angle ADB is 90 degrees.

Step #4: Call the length of BD h, and apply the Pythagorean Theorem in triangle ADB:

$$\left(\frac{s}{2}\right)^2 + h^2 = s^2$$

$$\frac{s^2}{4} + h^2 = s^2$$

$$h^2 = s^2 - \frac{s^2}{4}$$

$$h^2 = \frac{4s^2}{4} - \frac{s^2}{4}$$

$$h^2 = \frac{3s^2}{4}$$

$$h = \frac{s\sqrt{3}}{2}$$

Step #5: Now that we have the height in terms of s, we can find the area.

$$Area = \frac{1}{2}bh$$

$$Area = \frac{1}{2} \times s \times \frac{s\sqrt{3}}{2}$$

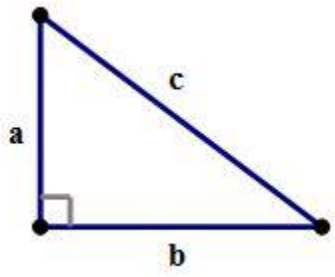
$$Area = \frac{s^2\sqrt{3}}{4}$$

That last formula is, indeed, the area of an equilateral triangle, and remembering it w
definite time-saver on GMAT Math. Again, I don't want you to ***memorize*** it. Rather, I st
encourage you to remember this five step argument: practice recreating it step-by-step unt
youcan flawlessly recapitulate the entire thing by yourself. Then, you won't merely remembe
formula — you will own it!

The Top Five GMAT Math Formulas

The Pythagorean Theorem

There's a reason this is the most famous theorem in mathematics! This remarkable theorem is one of the most versatile and highly adaptable formulas in existence. Of course, I'm sure you remember that it says: For any right triangle,

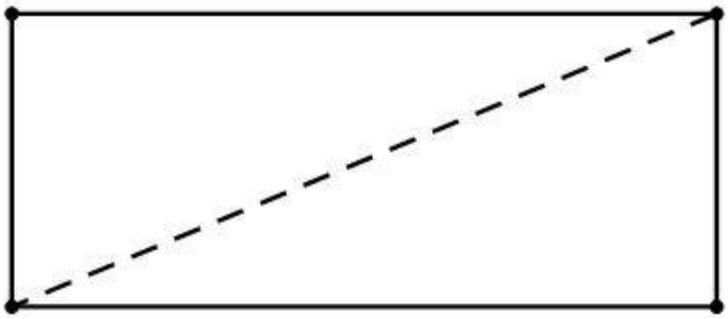


$$a^2 + b^2 = c^2$$

Of course, if any question gives you two sides of a right triangle and asks you to find the third, you will use this formula. Here are a couple problems to show its other guises.

Area of a Triangle

As you may remember from high school, $A = \frac{1}{2}bh$, where b is the base and h is the height. If you are having trouble remembering this, simply remember that a rectangle has an area of A = bh, and that a triangle is half a rectangle.



Averages and Sums

Everyone knows how to find an average, but the power of this formula is often underestimated. We know:

average = (sum of the items)/(number of items)

Notice, we can also write this as:

sum of items = (average)*(number of items)

This latter form can be powerful. For example, if we add or subtract one item from a set, we can easily figure out how that changes the sum, and that can allow us to calculate the new average. Also, if we are combining two groups of different sizes, we can't add averages, but we can add sums.

Distance and Work Rate

Formulas

A rate is how fast something is growing, changing, or being performed. The overarching rate formula is:

Amount = Rate x Time

When the rate is a speed, this simplifies to the familiar formula:

Distance = Speed x Time

In questions about speed, especially where an object travels at one speed for a while, then at another speed, keep in mind that you ***never*** find the numerical average of two different speeds. If the question ask for average velocity for the whole trip, then you add the distances from both parts of the trip to find the total distance, and add the times of both parts of the trip to find the total time, and use those and the formula above to calculate the speed.
When the rate is a rate of work being done, then when two people work together, their combined rate is the sum of their respective individual rates. Make sure what are you adding are the rates, not anything else.

Permutations and Combinations

Permutations

A permutation is a possible order in which to put a set of objects. Suppose I had a shelf of 5 different books, and I wanted to know: in how many different orders can I put these 5 books? Another way to say that is: 5 books have how many different permutations?
In order to answer this question, we need an odd math symbol: the factorial. It's written as an exclamation sign, and it means: the product of that number and all the positive integers below it, down to 1. For example, 4! (read "four factorial") is

4! = (4)(3)(2)(1) = 24

Here's the permutation formula:

# of permutations of n objects = n!

So, five books → the number of permutations is 5! = (5)(4)(3)(2)(1) = 120

Combinations

A combination is a selection from a larger set. Suppose there is a class of 20, and we are going to pick a team of three people at random, and we want to know: how many different possible three-person teams could we pick? Another way to say that is: how many different combinations of 3 can be taken from a set of 20?
This formula is scary looking, but really not bad at all. If n is the size of the larger collection, and r is the number of elements that will be selected, then the number of combinations is given by

$$\text{\# of combinations} = \frac{n!}{r!(n-r)!}$$

Again, this looks complicated, but it gets simple very fast. In the question just posed, n = 20, r = 3, and n – r = 17. Therefore,

$$\text{\# of combinations} = \frac{20!}{3!(17)!}$$

To simplify this, consider that:

20! = (20)(19)(18)(17)(the product of all the numbers less than 17)

Or, in other words,

20! = (20)(19)(18)(17!)

That neat little trick allows us to enormously simplify the combinations formula:

$$\text{\# of combinations} = \frac{20!}{3!(17)!} = \frac{20\times19\times18\times17!}{3!(17)!} = \frac{20\times19\times18}{3\times2\times1} = 1140$$

That example is most likely harder than anything you'll see on the GMAT math, but you may be asked to find combinations with smaller numbers.

The Power of Estimation for GMAT Quant

There's an old saying that says, "Almost only counts in horseshoes and hand grenades." In g school and high school, you were probably taught that math had to be precise; maybe you eve that unforgivingly drilled into you. Well, now you're preparing for the GMAT, and the rules are different. On GMAT Math, "almost" can be good enough to count.

It's a fact that you cannot use a calculator on the GMAT. Therefore, it's also a fact that the writers of the GMAT can't expect you do long calculator-type calculations on the GMAT. They can't expect you to multiply & divide four ugly decimals and get an exact answer – but they can, and will, expect you to estimate.

When should I estimate on GMAT math?

The short answer is: whenever you would have to be a Will-Hunting-type savant to figure out the exact result in your head, that's a clue that you should ditch the exact answer altogether and try estimating. The GMAT may give you the green light by using the words "the estimated value of" or "approximately." Another clue is the spread of the answer choices. If the answer choices are all very close together, well, then it's going to take some precision to distinguish among them. But, if the answer choices are widely spaced, estimating will get you close enough to the right answer.

What the GMAT will and won't ask

Here is an example of a question that will <u>not</u> appear on the GMAT Math: "Jill invests $10000 in an account that pays an annual rate of 3.96%, compounding semi-annually. Figure out the exact amount she has after two years." True, that might have been a question in high school math, but definitely not on the GMAT. First of all, it's not Problem Solving or Data Sufficiency, so it's not the right question type. Moreover, nobody short of a savant-sadist is going to expect you come up to the exact answer that question without a calculator. You will absolutely not have to do a problem like that.

Here, though, is a suspiciously similar question, and one that the GMAT ***could*** pose:

1. Jill invests $10000 in an account that pays an annual rate of 3.96%, compounding semi-annually. Approximately how much does she have in her account after two years?

   A. $10079.44
   B. $10815.83
   C. $12652.61
   D. $14232.14
   E. $20598.11

Solution: first of all, notice the magic word "approximately" — the test-writer is letti… estimation is perfectly fine. Furthermore, the answer choices are nicely spread out, whi… facilitate estimating.

OK, get ready for some fast & furious estimation. The interest rate 3.96% is an ugly number, so I going to approximate that as 4%. It compounds semiannually, so that means that there's 2% every six months, and that happens four times in two years. Well, 2% of $10000 is $200. If you get $200, or a little more, on four occasions, that's a little more than $800 in interest. We expect an answer slightly higher than $10800, so of course **(B)** is just right.
Notice, I estimated so that everything up until the last sum was single-digit math. Single-digit calculations are a good standard for which to strive when you are practicing estimation.

By the way, if you find the bank that will do answer (E), ***double your money in only two years***, that's terrific, but it probably is something wildly illegal, a Ponzi scheme or worse! In the real world, that just doesn't happen. On word problems, especially in financial situations, you should always have your antenna up for what's realistic or unrealistic.

Practice Question

2. ACME's manufacturing costs for sets of horseshoes include a $11,450 initial outlay, and $19.75 per set. They can sell the sets $52.50. If profit is revenue from sales minus manufacturing costs, and the company produces & sells 987 sets of horseshoes, what was their profit?

   A. $20,874.25
   B. $30,943.25
   C. $41,308.50
   D. $51,817.50
   E. $53,624.25

Answer and Explanation

The numbers are ugly, and the answer choices are widely spread out. This problem is absolutely screaming for estimation!

So here's some more fast and furious estimation. Initial manufacturing outlay: round that from $11450 to $10000. Cost per set: round to $20. Sales revenue per set: $50. Number produced & sold: 1000. OK, now we're in business.

Cost equals 10000 + 20*1000 = 10000 + 20000 = $30000. Sales revenue = 50*1000 = $50000. Profit = (Sales Revenue) – (Cost) =$50000 – $30000 = $20000. Answer choice **(A)** is the only answer even close to that. Single digit calculations all the way, and it was enough to get the answer!

Drawn as Accurately as Possible

Using the information given in diagrams to your advantage

The following sentences appear in the directions to the GMAT Problem Solving questions.

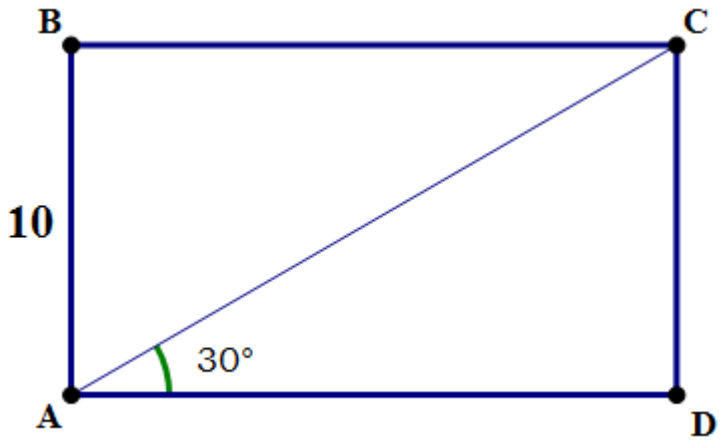
A figure accompanying a problem solving questions is intended to provide information useful in solving the problem. Figures are drawn as accurately as possible. Exceptions will be clearly noted.

Many GMAT-takers underestimate the valuable information given there. Diagrams on GMAT Problem Solving are basically drawn to scale. The only time that doesn't hold is if you see the note printed "Diagram not necessarily to scale" — then, all bets are off about how the figure actually looks. But if that disclaimer is not printed, what you have on GMAT Problem-Solving is a diagram drawn to scale, guaranteed.

What You Can Assume

Consider the following question:

1. The area of rectangle ABCD is closest to which of the following?



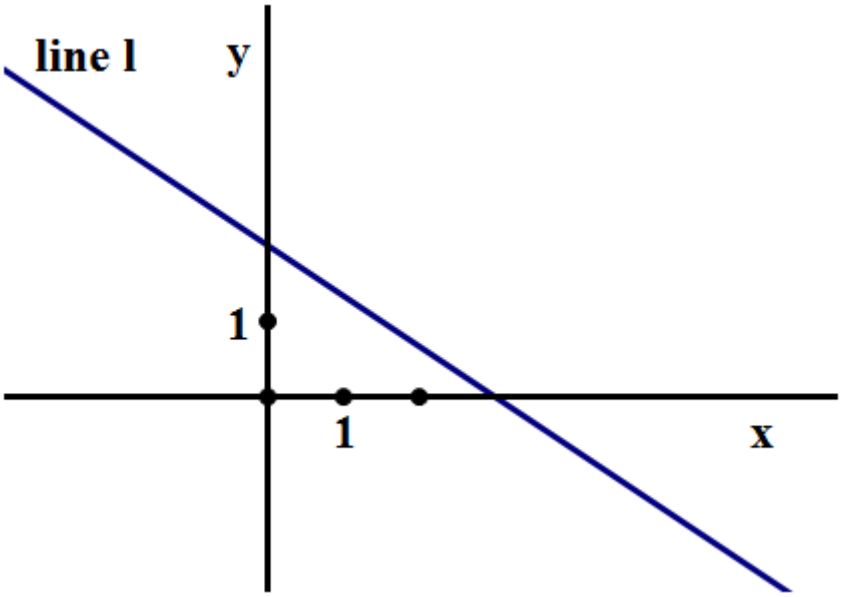
A. 100
B. 130
C. 170
D. 200
E. 230

Suppose we don't know the math to answer this question. We are told it's a rectangle, so we know the angles must be right angles, and we know the area must be length (AD) times height (AB). We know the height is 10. We know AD is drawn to scale. It definitely is longer than AB, so the area is definitely larger than 10 x 10 (answer (A) is out). AD doesn't look as long as twice AB, so the area is

definitely less than 10 x 20 (answers (D) & (E) are out). Notice, with pure spatial estim
eliminated three of the five answer choices, so it will be to our advantage to guess rando
the remaining two if we can't decide between them. Estimating from size can be a huge he
don't remember the way to solve the problem.

BTW, the real math solution to that question: from the properties of the 30-60-90 triangle (ACD), we know that AD = 10*√(3), and since √(3) is approximately 1. 7, AD is approximately 17, and the area is approximately 170. Answer = **C**.

Here's another. This is from the GMAT OG. In the GMAT OG12e, it's Problem Solving #210, and in the OG13e, it's Problem Solving #211.



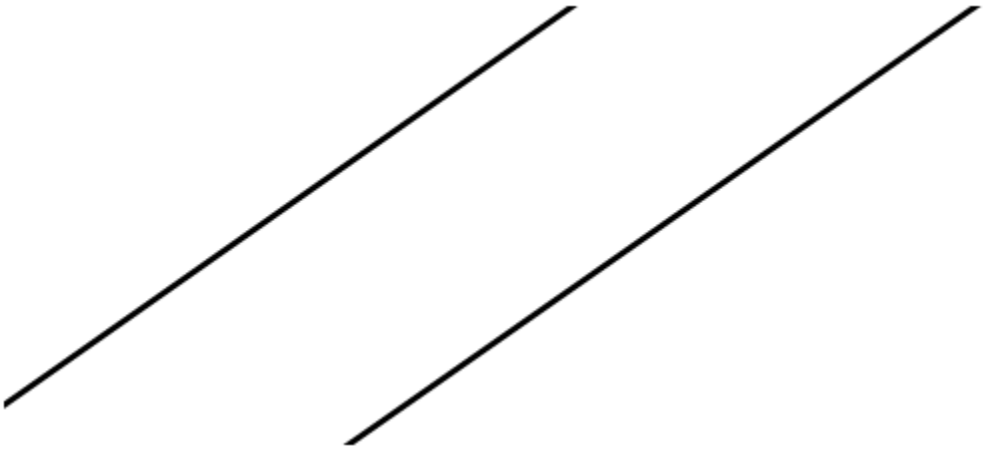
2. In the coordinate system above, which of the following is the equation of line l?

   A. 2x – 3y = 6
   B. 2x + 3y = 6
   C. 3x + 2y = 6
   D. 2x – 3y = -6
   E. 3x – 2y =-6

A student asked about this question: how do we know that the x-intercept of line l is 3 and the y-intercept is 2? Well, technically, we don't know that they are exactly 3 and 2, but we know from the diagram that if they are not exactly 3 and 2, they are very very close. Thus, x-intercept = 3 and y-intercept= 2 make an excellent starting point: even if they are not spot-on correct, they are very good approximations. As it happens, the exact values themselves lead to the correct answer of **B**.

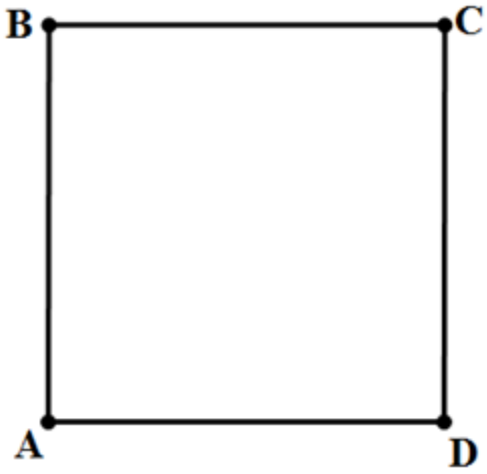
What You Can't Assume

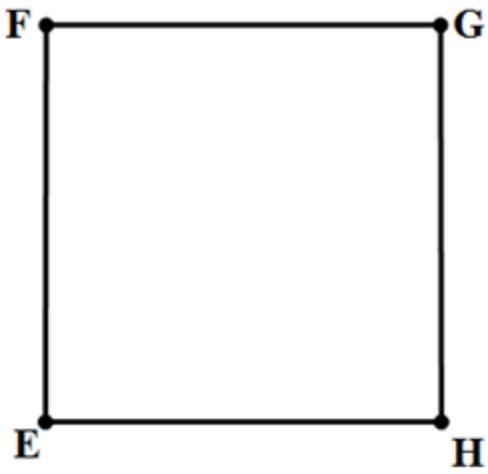
You can't assume lines are parallel, because many special properties are true only if two li exactly parallel, but the naked eye cannot distinguish exactly parallel from almost parallel. F example:



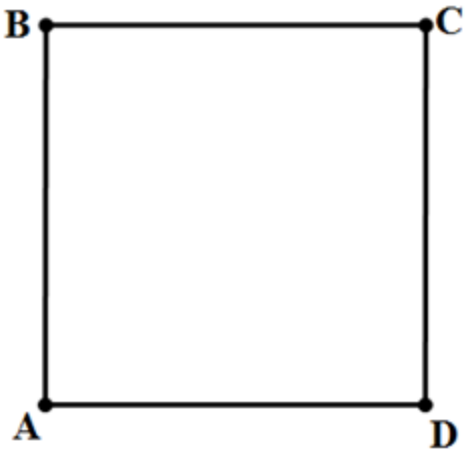
These lines look parallel, right? They're not: they are 1/10 of one degree off from exactly parallel, and that means: none of the special geometry facts for parallel lines would apply to these lines.

The same applies to right angles. An angle of 89.9° or 90.1° will look like a right angle to the unaided eye, but if it's not an exact right angle, none of the special right angle facts (like the Pythagorean Theorem) will apply. For example:



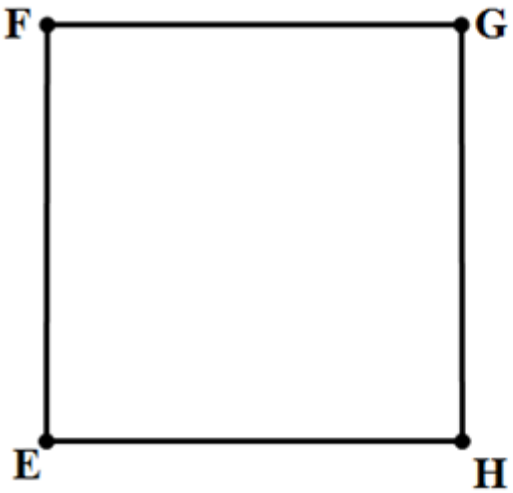


These are two squares, right? Think again. Here is each one with individual measurements:



m∠DAB = 89.90000°
m∠ABC = 90.10000°
m∠BCD = 89.90000°
m∠CDA = 90.10000°
AB = 6.00000 cm
BC = 6.00000 cm
CD = 6.00000 cm
DA = 6.00000 cm

ABCD is actually a rhombus: four equal sides, and opposite pairs of angles equal, but not equiangular, the way a square should be.



m∠HEF = 89.90000°
m∠EFG = 90.10000°
m∠FGH = 90.10000°
m∠GHE = 89.90000°
EH = 6.00000 cm
EF = 6.00000 cm
HG = 6.00000 cm
FG = 5.97906 cm

EFGH is actually an isosceles trapezoid: equal pairs of base angles, and the legs (EF & GH) are congruent. Both look like squares, but neither one is.

None of the parallel properties in geometry are true for “almost parallel,” and none of the right angle properties are true for “almost a right angle.”

The Moral

Diagrams on GMAT Problem Solving are drawn to scale. That serves you very well when you are approximating. That doesn’t help you, and may mislead you, if you need something to be exactly true.

Understanding Percentages

Here are five quick tips to make you much more effective at interpreting and solving GMAT problems involving percentages.

Percentages and Decimals

Fundamentally, a percent is a fraction out of 100 – it is ***per centum*** (Latin for "per 100"). It's easy to change a percent to a decimal. For example, 37% means 37 parts out of one hundred, or 37/100. As a decimal, that's just 0.37. Changing a percent to a decimal simply involves sliding the decimal to the right two places.

Percentage Changes as Multipliers

This is one of the **BIG** math ideas for GMAT. A multiplier is a factor by which you multiply a number to get a desired result. There are three percentage-related multipliers you will need to understand

1. **X% of a number**

   Suppose I have $400 in an account, and need to know what 30% of this account is. The multiplier = the percentage as a decimal. 30% as a decimal is 0.30, and $400(0.30) = $120, so $120 is 30% of $400.

2. **An X% increase**

   Suppose I have $400 in an account, over time period, I am going to get an additional 5% of interest; in other word, my account is going to increase by 5%. Here, the **multiplier = 1 + (the percentage as a decimal)**. Thus, $400(1.05) = $420, so that's the amount I would have after a 5% increase

3. **An X% decrease**

   Suppose I have $400 in an account, and because of some kind of penalty, I am going to be nailed with a 15% deduction; in other words, my account will decrease by 15%. Here, the **multiplier = 1 – (the percentage as a decimal)**. In this case, the multiplier = 1 – 0.15 = 0.85, and the result after the deduction is ($400)(0.85) = $340.

Calculating a Percentage Change

Basically, a percentage is a simple $\frac{part}{whole}$ ratio times 100. The GMAT will ask you to calculate percentage changes, and here you have to be very careful with order, i.e., what's the starting number and what's the ending number. IMPORTANT: ***in a percentage change, the starting number is always 100%***. Thus, we can say:

$$percent\ change = \frac{amount\ \ of\ \ change}{starting\ \ amount} \times 100$$

Here are a couple of examples:

1. ***Price increases from $400 to $500; find the percentage increase.***

   Of course, that's a change of $100, so $100 divided by starting value of $400 is 0. 25, times 100 is 25%. A move from $400 to $500 is a 25% increase.

2. ***Price decreases from $500 to $400; find the percentage decrease.***

   Change is still $100, but now the starting value is $500, and $100/$500 = 0. 20, times 100 is 20%. A move from $500 to $400 is a 20% decrease.

BIG IDEA: Order matters. When you change from one value to another and want the percentage change, it matters which value was the starting value.

A Series of Percentage Changes

Example: "Profits increased by 40% in January, then decreased by 30% in February, then increased by 20% in March. Express the change over the entire first quarter as a single percentage." This may seem like a nightmare problem, but it's quite approachable with multipliers. First
Caution: **NEVER add a series of percentages**. That's what many people will do, and on multiple choice, it's always an answer choice – here, that would be 40 – 30 + 20 = 30. That is **not** the way to go about answering the question.

The way to attack this question is with a series of multipliers:

In January, a 40% increase -> multiplier = 1.40

In February, a 30% decrease -> multiplier = 0.70

In March, a 20% increase -> multiplier = 1.20

Aggregate change = (1.40)(0.70)(1.20) = 1.176 -> that's a 17.6% change for the quarter.

BIG IDEA: For a series of percentage changes, simply multiply the respective multipliers.

The Increase – Decrease Trap

This is a predictable GMAT Math trap: the result of a percentage increase, followed by a percentage decrease of the same numerical value. For example, "The price of the appliance increase 20%, and then decreased 20%. The final price is what percent of the original price." Every single time that question is asked on multiple choice, the incorrect answer of 100% will be an

answer choice, and every single time, a large portion of folks who take the GMAT will [illegible] You have a leg up if you simply recognize and remember that this is a trap.

In fact, solving this problem is just an extension of the previous item:

a 20% increase -> multiplier = 1. 20

a 20% decrease -> multiplier = 0. 80

total change = (1. 20)(0. 80) = 0. 96

Thus, after the increase and decrease, the final price is 96% of the original price.

BIG IDEA #1: when you go up by a percent, then down by the same percent, you do ***not*** wind up where you started: that's the trap.

BIG IDEA #2: in this situation, as in any situation in which you have a series of percentage changes, simply multiply the respective multipliers.

If you simply remain clear on these five tips, you will be a master of percent & percentage change, one of the most frequently asked topics on GMAT Math.

Fractions

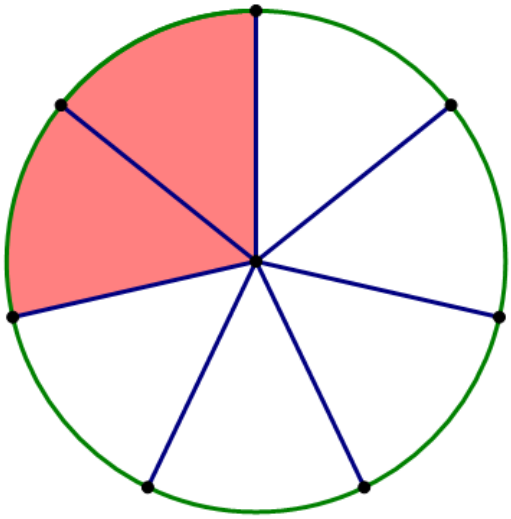
Why Fractions are Hard

Of all the math topics that raise dread, fear, anxiety, and confusion, few do so as consistently and as potently as do fractions. I have my own personal theory why fractions are hard. The trouble is: think about when you learned fractions — maybe the third, fourth, and/or fifth grades. That's when fractions are usually taught, but there are two problems with that. First of all, that's before the tsunami of puberty hit you and virtually obliterated all previously held logical connections in your head. More importantly, fractions, like many other topics in math, involve sophisticated patterns, but in the fourth grade, no one is capable of abstraction, so instead you are just taught to reproduce patterns mechanically, and relying on mechanical repetition has severe limitations: similarly looking things become conflated, and when you get confused, you basically don't know what to do. Many people simply give up at that point.

The solution is to re-approach those mechanical procedures, but with ***understanding***. When you understand why you do each thing, then (a) you can remember it much better, and (b) in a moment of confusion you can figure out what to do. I will lead you through fractions from the ground up.

What is a Fraction?

A fraction is a way of showing division. The fraction 2/7 means the number you get when you divide 2 by 7. The top of a fraction is called the **numerator**, and the bottom of a fraction is called the **denominator**.
The fraction 2/7 also means the following. Imagine dividing something whole into seven equal parts —- one of those parts is 1/7 of the whole, so 2/7 = 2*(1/7) is two of those parts. Probably this diagram will call up dim memories from your prepubescent mathematical experiences.



That, visually, represents 2/7. Two vital things to remember about 2/7 — one is that 2 [illegible] of the thing called 1/7 — 2/7 = 2*(1/7), and second is this visual perspective that is always [illegible]

Notice that if you have the fractions 4/14 or 10/35, they both cancel down to 2/7. **Cancelling is <u>division</u>**. That's a big idea — thus, when you have 4/20, and you cancel (i.e. divide) the 4's in numerator and the denominator, they don't simply "go away" (a fourth-grade mechanical way of thinking), but rather what's left in the numerator is 4 ÷ 4 = 1, and we get 4/20 = 1/5.

Adding and Subtraction Fractions

First of all, let's address the common mistake: when you add fractions, you can't simply add across in the numerator and denominator (this is the mistake people make when they mechanically perform the rule for multiplication with addition instead!)

$$\frac{a}{b} + \frac{c}{d} \neq \frac{a+c}{b+d}$$

You may dimly remember that **you can add and subtract fractions when you have a <u>common denominator</u>**. That's true, but why is that true? Believe it or not, the basis of this fact is none other than the Distributive Law, a(b + c) = ab + ac. For example, if I add 3x and 5x, I get 3x + 5x = 8x — according to the Distributive Law, I can add two terms of the same thing, BUT if I want to add 3x + 5y, I can't simplify that any further and must keep it as 3x + 5y. If you add two terms of the same underlying thing, you can combine the terms, but if you are adding proverbial apples and oranges, you can't combine. Well, 3/11 + 5/11 is really just 3*(1/11) + 5*(1/11) — so, by the Distributive Law, you are allowed to add two terms of the same thing: 3/11 + 5/11 = 8/11
When the denominators are not the same — 3/8 + 1/6 — then you can't add them as is, but you can take advantage of a sleek mathematical trick. We know that any number over itself, say 3/3, equals 1, and you can always multiply by 1 and not change the value of something. Therefore, I could multiply 3/8 by some a/a, and multiply 1/6 by some other b/b, and both would retain the same value. I want to multiply each so that I find the Least Common Denominator (LCD), which here is 24. Thus,

$$\left(\frac{3}{8}\right) + \left(\frac{1}{6}\right) = \left(\frac{3}{8}\right) \cdot \left(\frac{3}{3}\right) + \left(\frac{1}{6}\right) \cdot \left(\frac{4}{4}\right) = \left(\frac{9}{24}\right) + \left(\frac{4}{24}\right) = \left(\frac{13}{24}\right)$$

The same thing works for subtraction:

$$\left(\frac{3}{8}\right) - \left(\frac{1}{6}\right) = \left(\frac{3}{8}\right) \cdot \left(\frac{3}{3}\right) - \left(\frac{1}{6}\right) \cdot \left(\frac{4}{4}\right) = \left(\frac{9}{24}\right) - \left(\frac{4}{24}\right) = \left(\frac{5}{24}\right)$$

Multiplying Fractions

This is the easiest of all fractions rules. To multiply fractions, multiply across in the numer and denominators.

$$\frac{5}{7} \times \frac{2}{3} = \frac{10}{21}$$

What's a little tricky about multiplication is what you can cancel. If you are multiplying two fractions, of course you can cancel any numerator with its own denominator, but you can also cancel one numerator with another denominator. Sometimes, that is called "cross-cancelling", which I think is a 100% useless term that reinforces fourth-grade mechanical thinking. I think it's much more effective to remember: when you multiply fractions, you can cancel any numerator with any denominator. Here's a horrendous multiplication problem that simplifies elegantly with the liberal use of cancelling.

$$\frac{26}{48} \times \frac{18}{56} \times \frac{64}{39} = \frac{26}{48} \times \frac{18}{7} \times \frac{8}{39} = \frac{2}{48} \times \frac{18}{7} \times \frac{8}{3}$$

$$= \frac{2}{6} \times \frac{18}{7} \times \frac{1}{3} = \frac{2}{1} \times \frac{1}{7} \times \frac{1}{1} = \frac{2}{7}$$

Dividing Fractions

First of all, multiplying by 1/3 is the same as dividing by 3. That's just the fundamental definition of fraction as division. This also means, dividing by 1/3 is the same as multiplying by 3. This pattern suggests, correctly, that dividing by a fraction simply means multiplying by its reciprocal:

$$\frac{5}{12} \div \frac{3}{8} = \frac{5}{12} \times \frac{8}{3} = \frac{5}{3} \times \frac{2}{3} = \frac{10}{9}$$

Notice, as always, that you cancel ***before*** you multiply. Dividing a fraction by a number follows the same pattern:

$$\frac{6/13}{3} = \frac{6}{13} \div \frac{3}{1} = \frac{6}{13} \times \frac{1}{3} = \frac{2}{13}$$

Notice, this is really the same idea as: dividing by 3 means the same thin as multiplying by 1/3. Also, again, notice we cancel ***before*** we multiply.

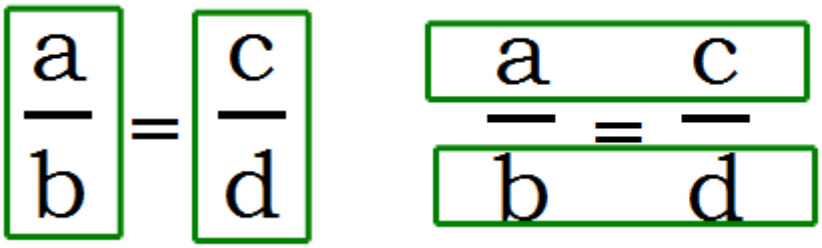
Proportions

Another word for a fraction is a **ratio**: ratios and fractions are exactly the same thing. A pr is when you have two ratios, two fractions, set equal to each other. For example:

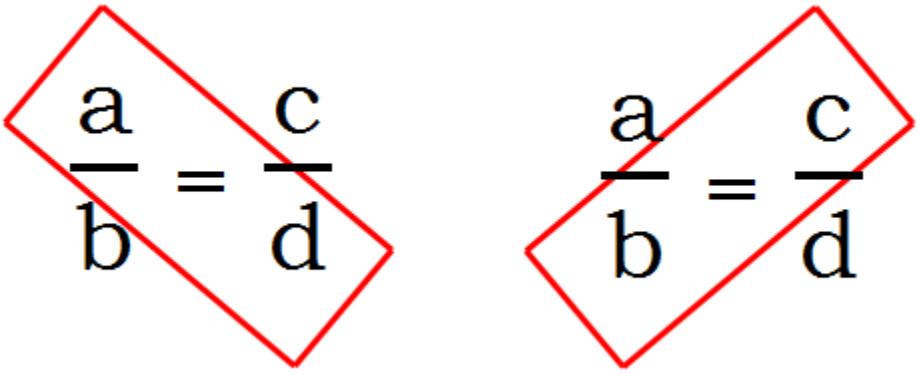
$$\frac{x}{12} = \frac{33}{28}$$

One legitimate move is to **cross-multiply**, although doing so here would violate the ultra-strategic dictum: cancel ***before*** you multiply. And it's precisely this issue, what can you cancel and what can't cancel in a proportion that causes endless confusion. Let's look at the general proportion a/b = c/d.

First of all, as always, you can cancel any numerator with its own denominator — you can cancel common factors in a & b, or in c & d. Furthermore, a proportion, by its very nature, is an equation, and you can always multiply or divide both sides of an equation by the same thing. This means: you can cancel common factors in both numerators (a & c) or in both denominators (b & d). The following diagrams summarize all the legitimate directions of cancellation in a proportion.



The following are highly tempting but complete illegal ways to cancel in proportions:



The trouble is, folks mechanically memorize the cancelling pattern for multiplying fractions — or even worse, they learn an utterly useless term like "cross-cancelling" — and then they mechanically apply that pattern when there's an equal sign between the two fractions instead of a

multiplication sign. This is a major mistake, and any time a proportion appears on the test-maker is expecting a large flock of test-takers to fall into this trap.

Let's solve the proportion we wrote above, with proper cancelling:

$$\frac{x}{12} = \frac{33}{28} \rightarrow \frac{x}{3} = \frac{33}{7} \rightarrow x = \frac{99}{7}$$

Notice, in that last step, to isolate x, all we had to do was multiply both sides by 3. Cross-multiplying, while always legal in a proportion, often is a waste of time that simply adds extra steps.

Verbal

Introduction to GMAT Verbal Section

Fact: The GMAT Verbal section is 75 minutes long.

Fact: Like the Quantitative section, the Verbal section is Computer Adaptive, which means the test will be adjusting the difficulty as you move through the section.

Fact: The Verbal section has 41 multiple choice questions.

Fact: There are three question types on the Verbal Section: (1) Reading Comprehension (RC); (2) Critical Reasoning; and (3) Sentence Correction. These three types will be roughly evenly distributed, so you will have 13-14 of each of the three kinds in a typical Verbal section.

Fact: the Verbal score, along with the Quantitative score, determines your Total 200 – 800 GMAT score. The AWA and IR sections have separate scores and are not included in the Total GMAT score.

Why does the GMAT have a Verbal Section?

The facile answer is: Of course the GMAT has a Verbal section, because that's more or less the norm for standardized tests. The PSAT, the SAT, the ACT, the GRE, the LSAT, and even the MCAT all involve a Verbal or English section, so why wouldn't the GMAT?

A deeper answer is: To be a truly successful executive in the modern business world, one needs a wide variety of skills, but undeniably, some of the essential skills are verbal skills.

In a recent case, on a company conference call, Herbalife executives did not have ready answers to probing questions posed by hedge fund manager David Einhorn, and as a result, Herbalife's stock dropped 24% in two days!! That's an extreme example of how not saying the right thing at the right time can be problematic in the business world, but clearly the more frequently one *can* say the right thing at the right time, the more likely one will be successful as an executive!

All of business involves selling, and selling almost always involves presenting words and interpreting words. Both the seller and the buyer need to have sophisticated verbal skills to negotiate the finer points of selling at almost any level.

Finally, there is the simply issue of establishing credibility. No matter how intelligent you are, folks who know you only through your writing will have a low opinion of you if your writing is full of grammatical errors! Similarly, if the arguments you pose are vulnerable to obvious objections, you are unlikely to be persuasive even if you are right! Being successful in business means making a good first impression on new people time and time again, and clearly that involves verbal skills.

Introduction to Reading Comprehension

- A typical GMAT Verbal Section will have four RC passages, among batches of SC & RC. Each RC question has a batch of 3-4 questions with it.
- "Short" RC passages are typically 200-250 words, and typically have 3 questions. "Long" RC passages are typically 300-350 words, and typically have 4 questions. A GMAT Verbal section usually has 3 Short passages and 1 Long passage; although in rare instances it could have two of each.
- Passage may concern the natural and social science (e. g. from textbooks or journals), the humanities (e. g. from books or academic articles), or the business world (e. g. economics, sales, human resources, etc.) In no case are you expected to have outside knowledge of what's in the passage.
- The primarily skills RC tests are (a) the ability to determine the main idea of a passage; (b) the ability to draw connections between facts and concepts; (c) the ability to extend the pattern, to see where the argument is heading.
- The GMAT presents RC on a split screen. On the left side is the passage: it will have a scroll bar if it's long. On the right side, one question at a time will appear. You will always be able to see the passage in its entirety, but you can only see one question at a time.
- Virtually all RC questions fall into one of the following six categories:

  1. Find the main idea (this is almost ALWAYS one of the questions)
  2. Supporting ideas/details --- why did the author mention such-and-such?
  3. Inferences --- with which new statement would the author agree?
  4. Analogical --- applying information in the passage to a completely new and different situation
  5. Logical structure --- does author support a new idea? Contrast two ideas? Shoot down something traditionally accepted? Etc. etc.
  6. Tone --- the emotional color with which the author presents the material --- is the author enthusiastic? Critical? Optimistic? Etc.

Overall Reading Comprehension Strategies

Strategy #1: GMAT RC is not a speed reading contest!

Give yourself 2.5 minutes for short passages, and 3.5 minutes for long passages. Every time you read a passage, set a timer for this time, so that you get used to it: you will find that these times let you read at a relaxed pace that allows for thorough comprehension, while still affording a minute per question.

Strategy #2: Map, don't memorize!

When you read, your job is to determine (a) the main idea of the passage, and (b) the topic/function of each individual paragraph. Create, as it were, a "map" of the passage, from which you can locate details if the questions address them.

You do not need to memorize the vivid details of, say, Hesseldorf's new theory of the evolutionary changes in mammalian digestion at the onset of the Pleistocene; you just have to know: where does the passage go into detail about that factoid, so if a detail question arises, you can go back to that place and re-read. Your goal is to read the whole passage once, at a relaxed pace, and re-read only specific detail passages as necessary.

Strategy #3: Take notes!

This is one strategy many people fight tooth and nail. When you read RC passages, take notes on scrap paper. Write down the main idea, in ten words or fewer (symbols & abbreviations that make sense to you are fine). Write down the topic of each paragraph, in ten words or fewer. This seems like it would take more time, but when you practice this skill and get efficient at it, it's actually a time-saver overall.

On the real GMAT, you will get an erasable packet and dry-erase pens: many folks find this is helpful for calculations on the Quantitative section, and the principal use on the Verbal section is for taking notes on RC questions.

Here's an excellent way to see how good your notes are. Read a passage, taking notes. Then, without even looking at the questions, put that passage aside. The next day, with just your notes and without rereading the passage, try to answer the questions: you probably won't be able to answer detail questions, but if your notes are any good, main idea questions should be easy.

Strategy #4: Read the first question first

One suggested strategy is: before your read the passage, read the first question ---- not the answer choices, good god! --- but just the question. That way, you will have it on your radar. In particular, if the first question is a detail question, you will have your antennae up for that detail as you read.

Not everyone finds this helpful. Experiment, and see what works best for you.

Strategy #5: Read!

Especially if RC is not your thing, then read every day. Read hard, challenging material even outside your GMAT prep. The *Economist* is, for a variety of reasons, probably the best weekly journal to read regularly.

For science reading, both *Scientific American* and *National Geographic* are excellent sources. If you have a friend who majored in a discipline different from yours, ask to borrow a couple textbooks and ask for their recommendations of good chapters to read. After you read it, your friend may even be willing to quiz you on the text.

Wikipedia is another virtually inexhaustible source of challenging reading. Pick a famous scientist (e. g. Linus Pauling, Marie Curie, Barbara McClintock, etc.), follow the link to one of their discoveries or theories, and read that thoroughly. Or, pick a famous historical figure whose name you've heard but about whom you know nothing (e. g. Cardinal Richelieu, Suleiman the Magnificent, Eleanor of Aquitaine, etc.) and read thoroughly about their role in history. Or pick a discipline about which you know nothing, follow a link to one of the important ideas in that discipline, and read about it thoroughly. There's no end of cool new stuff to learn!!

Strategies for the 6 RC Question Types

Virtually all GMAT Reading Comprehension questions fall into these categories.

Find the Main Idea

GMAT asks this question about almost every passage in RC. This is the number-one RC skill, which you need to practice over and over again. It will help to read at a relaxed pace (2.5 minutes for a short RC passage, 3.5 for a long passage). It will help to practice taking notes. It will also help to practice repeatedly, checking the official answers each time and reading the explanation in the OG to understand, whether you got the question right or wrong.

Detail

“The role of the second paragraph is …”, “The author mentioned the life cycle of wombats at the end of the first paragraph in order to …”

This is not entirely different from the first question type. The main idea is what informs the entire passage, what drives the whole passage, so any detail mentioned has to support the main idea in some way. To answer a detail question, you need to know the main idea, and you probably will need to go back and re-read those particular sentences to see how it plugs in to the main idea.

Inference

Good authors are not explicit about everything: while they say something things directly, they imply others. Inference questions test your ability to read between the lines, to figure out what the author is implying.

On the GMAT be careful to stay hyper-faithful to the passage. Any correct implication is something that was not explicitly stated but **must** be true. It must be a direct logical consequence of what was said. If the passage says, “Ben has been to every country in Europe at least once”, we can't necessarily infer that “Ben enjoys traveling” --- maybe Ben hates traveling but has had to travel for work, for example. An undeniable implication is: “Ben has been to Portugal at least once.” That's the level of logical undeniability that you should seek in inference questions answer choices.

Out of Context

Some of these questions will present a new concept, one not discussed at all in the text, and ask you what the author would think about it. Here, you need to have deduced from the passage the perspective and preferences of the author in order to answer this question.

The questions may also ask you to compare something in the passage to a hypothetic e m a completely different situation. “The compromised situation of the raccoon described i most like …”, and then the correct answer could be something like “a ballerina with a broke foot.” In these questions, you are asked to abstract out all particulars, and focus on what is essential to the situation or relationship in its most austere logical form.

In both cases, however seemingly remote the focus of the question is, the correct answer should still resonate with the author's main idea.

Logical Structure

Some questions will ask about the structure of the passage as a whole: Does the author present her own new idea? Does the author contrast two ideas, showing evenhandedly the strengths and weaknesses of both? Does the author sharping criticize a particular position or perspective? Sometimes this question is phrased as: what would be the best title for this passage?

Here, the main idea and paragraph summaries you formulate for your notes will be invaluable. Another huge help will be the “logical direction” words --- “moreover”, “although”, “ironically”, “but” etc. Always pay attention to these words when you read anything, to the way they shape the passage, and you thereby will start to develop an intuitive sense of the logical structure of passages.

Author's Tone

This is tricky, because unlike the extreme opinions typical of nutcases in the media, all the opinions and perspectives of GMAT authors will be moderated and nuanced. An author who judges something “promising” is wildly enthusiastic about it. An author who deems something “less than satisfactory” is completely slamming it. An author who finds something “troubling” is essentially pee-in-his-pants upset about it. If vivid emotions are bright colors, then GMAT passages don't get any more colorful than pastels. Pay attention to any words that have any emotional charge: these are the ones that will allow you to figure out the tone.

It's also important to remember: the tone in the passage will avoid extremes, so the correct answers to tone questions will avoid extremes as well. If the correct answer to a tone question is “skeptical”, wrong answers could include “dismissive” or “vengeful”, words that simply are two extreme for the tenor of GMAT RC.

Reading for the GMAT: The Economist

Get the most out of reading for the GMAT

Not surprisingly, one of the best ways to prepare for GMAT Reading Comprehension is simply to read. Not surprisingly, one of the best sources of reading as you prepare for business school is a weekly news magazine called *The Economist*. *The Economist* is one of the most intelligent weekly journals in print, and it brings a highly sophisticated perspective to all issues affecting micro- and macroeconomics. Its articles explore economics, politics, demographics, technology, etc. It targets the highly intelligent. If you can understand tone and implication in *Economist* articles, you will have absolutely no problem with these tasks on GMAT Reading Comprehension. If you read *The Economist* regularly between now and the time you take the GMAT, the familiarity you glean with national and world issues also might serve you well on tackling an AWA Essay. If you make a habit of reading it, that will give you an edge in business school, and after that, and edge in the business world.

How to Practice for GMAT RC

All that's great, but how do you get the most out of reading *The Economist* right now for GMAT Reading Comprehension? Here are my suggestions:

1. Read actively, with paper and pencil. Practice summarizing briefly each paragraph, writing this in shorthand on paper, just as you will write on the notepad on test day.

2. Always summarize for yourself, in ten words or fewer, the main idea of the article, then double check that each paragraph plays a role in supporting that main idea.

3. Practice looking for "signal" words — ("although", "however", "but", "nevertheless", etc. etc.) —words that indicate a shift in the direction of the argument

4. Always ask yourself while reading: is this a neutral perspective, or is the author arguing for or against something? *The Economist* tends to have a balanced tone and a subtle wry sense of humor, so it's a particularly good source for this, because it doesn't hit you over the head with tone. Exactly what words and phrases in the passage provide the hints for tone and the author's perspective?

5. Once you have sorted out the main idea & role of each paragraph, go back to some juicy or memorable detail — why did the author mention that? How does that detail support the paragraph? How does it support the main idea of the whole passage? (I can guarantee that every single syllable in the *The Economist* serves a specific purpose.)

6. ***Really advanced*** — pick an intriguing article and pretend you are GMAC. Write a set of 3-4 questions on this article. What would be particularly GMAT-like things to ask? You know they will ask for the main idea — can you come up with tempting-sounding decoys for wrong answer to that question? Can you formulate detail questions? tone questions? etc. The more

you practice writing these questions, and creating your own tempting-sounding answers, the easier they will be to spot on test day.

Practice with Others

You can get even more out of this if you convince a couple of your friends to join you, forming an Economist-GMAT-RC study group. Imagine there are four people in such a group, and you all agree to read a particular article from *The Economist*. Let's say you draw from a hat — one person has to create a main idea question, one has to create a tone question, one has to create a "purpose of this paragraph" question, and one has to create a detail question. Each person reads the article and creates his/her assigned question, and then the next time you meet, each person has three other questions to answer. One of the best ways to understand the logic of GMAT questions is to try to write them yourself!

Curiosity, the "Secret Sauce" of Reading Comprehension S

Understand the power of this underappreciated approach to RC!

Cognitive vs. Affective

Most discussions of preparing for the GMAT focus overwhelmingly on cognitive skills: learning, understanding, remembering, thinking strategically, deducing, etc. Most GMAT strategies and skills are cognitive in nature. While affective considerations are clearly less important, they merit some attention. Human beings are profoundly emotional beings, and as logical as we may strive to be, emotions essentially inform our all of thoughts and actions.

Consider two people who walk into the GMAT with roughly the same intelligence and roughly the same level of preparedness. Suppose person A feels optimistic, confident, buoyant, and simply relishing the opportunity to take on the invigorating challenge of the GMAT. Suppose person B walks in feeling depressed, pessimistic, anxious, and simply dreading the oppressive onus that the GMAT represent. Even though these two people start from roughly the same cognitive levels, the vast affective difference between them might be enough to cause a score difference of a couple hundred points. Self-fulfilling prophecies have been documented in psychological research for years, so the person whose emotions are all "tuned in" to success will have an enormous advantage to the person whose emotional outlook is bleak and unpromising.

Reading Comprehension and Your Emotions

In many ways, one's affective orientation is an overall concern on the GMAT, important but not specific to any part of the test. Confidence and optimism will help you more than anxiety and self-doubt, and that's true more or less irrespective of individual question type.

The one GMAT question where the focus of your emotional energy is a crucial consideration is Reading Comprehension. On GMAT RC, you are going to have to read short (200-250 word) and long (300-350 word) passages, difficult academic passages, and you are going to have to answer sophisticated questions about the content. You need to get as much as possible out of the passage you read. When do you get the most out of what you read? When you are interested in what you are reading.

"Great," you may think, "you want me to be passionately enthused about deathly dull topics like, say, the problems of archeology as a discipline, or the cardiovascular system of snakes!" Well, consider this. First of all, each passage of GMAT RC comes from an actual academic source, so believe it or not, for each passage, someone out there is genuinely passionate about that seemingly dry subject. Furthermore, we all have had the experience of a gifted teacher or lecturer turning us on to a topic that previously we considered with little interest. It turns out, whether you find a topic interesting has little to do with the actual cognitive content of the material; it has more to

do with presentation, and it has a great deal to do with how emotionally engaged you
how emotionally engaged *you allow yourself to be*.

Turning On

Albert Einstein said: “There are two ways to live: as if nothing is a miracle, and as if everything is a miracle.” For those who know anything about Einstein's biography, clearly he himself lived very much in the latter mode. The word “miracle” is an awfully strong word, so we could paraphrase the “two ways” --- “as if nothing is interesting, or as if everything is interesting.” It turns out, the difference between those two has very little to do with our external circumstance and very much to do with our fundamental emotional orientation.

Neurobiologists talk about “top-down” and “bottom-up” circuitry in the brain; “top-down” goes from the higher cognitive centers to the lower perceptual centers, and “bottom-up” goes from the perceptual centers to the cognitive centers. When we are looking closely at our surroundings, trying to figure out what we're seeing, we are using bottom-up circuits. When what we are seeing is deeply familiar and known, already mapped, we tend to use top-down circuits. Top-down circuit match stimulus to past patterns, and the emphasis is on what has already been experienced. Bottom-up circuits tune into the cutting edge of the present moment. Infants and young kids, trying to figure out everything, are almost constantly in their bottom-up circuitry, and that creates a great deal of the magic and wonder of early childhood. Adults, especially unexcited jaded adults, are almost exclusively in top-down circuits. Top-down circuits are useful and efficient, because you don't want to have to refigure out everything each new time you see it, but the price of overdoing this efficiency is that the world can become weary, stale, flat and emotionally unprofitable.

The demands of the adult world cause us to lean heavily on our top-down circuitry, and many people simply default to it 100% of the time, but that's not the only choice. Through practice, we can train ourselves to exercise regularly our bottom-up circuitry. This is exactly what mindfulness practice does. Zen Buddhism is also about getting out of one's head, one's preconceptions, and focusing more on one's unmediated perceptions, with the consequence of shifting us to a predominance of bottom-up circuitry. When we start to notice what is new, even ephemeral, in our familiar environments, we start to feel interested and excited again. As Hopkins says, “There lives the dearest freshness deep down things.” Once we become consistent in mindfulness practice, such that it informs the majority our day, then we are in bottom-up circuitry most of the time, and the world can become exciting, magical, and full of wonder. This adds some genuine neurobiological depth to the words of the ancient Chinese sage Mengzi: “The great person retains connection with her or his child's heart.”

Practicing Curiosity

As always with the brain, we need to practice to get good at something. If you want expan access to your innate bottom-up circuitry, you have to practice curiosity. Sometimes, curiosit involves actually doing a little research and finding out, but more often, it just is a doorway to imagination and open-ended wonder. Top-down processes are aligned with those parts of the brain that want to get clear answer and leave no questions hanging. Bottom-up circuits are all about the messy open-endedness of ongoing life as we experience it. Curiosity involves toning down the inner skeptic and allowing one's self to be surprised by one's immediate experience. The more one practices, the more vital and interesting the entire world becomes.

If you practice curiosity consistently, you will have a powerful skill on which to draw when you read GMAT Reading Comprehension. If you read with genuinely curiosity and wonder, you will get far more out of Reading Comprehension, and be far more successful on those questions, even if you haven't learned any additional RC strategies. Yes, those strategies are also useful, but even the best RC strategies are not going to make up for the profound edge genuine curiosity gives.

The consistent practice of curiosity, and the consistent practice of experience the world in a bottom-up mode, will help you immeasurably on GMAT RC. In fact, it will give you a GMAT experience much more like Person A than Person B of the second paragraph. It will also make you happier and more satisfied pretty much across the board in life. Not bad, for a Reading Comprehension strategy!

Practice Question

Magoosh Testimonials Score Guarantee Sign Up

Reading Comprehension

Instructions Flag 0:05

Choose the option that best answers the question.

For anyone claiming to write a history of a science of which reasoning forms the very essence, the question of the logic is of paramount importance. For example, a modern western account of any historical period in mathematics would, as a matter of course, show a detailed proof justifying each and every mathematical result discussed. Despite this obvious fact, general histories of Chinese mathematics rarely show concern for this issue. They insist above all on presenting only the mathematical results, the logical underpinnings of which are unclear, and rarely do they provide the reader with any semblance of a proof. While this approach to the history of mathematics is naturally a result of various causes, one which probably plays an essential role is the fact that most Chinese mathematical works themselves contain no logical justifications: according to this worldview, apparently it was enough to state authoritatively that something was true --- it was completely superfluous to demonstrate why it was true.

There is one major exception to this general pattern, namely a set of Chinese argumentative discourses which has been handed down to us from the first millennium A.D. We are referring to the commentaries and sub-commentaries on the *Jiuzhang Suanshu* ["The Nine Chapters on the Mathematical Art"], the key work which inaugurated Chinese mathematics and served as a reference for it over a long period of its history. This fact, which was long unrecognized, means that we are now in a position to know a lot more about the logical construction of mathematics in China than, for example, in Egypt, Mesopotamia, or India.

The author implies all of the following except:

- The ancient mathematical texts of Mesopotamia do not provide explicit proofs for all their results.
- The first Western scholars studying the history of Chinese mathematics were unaware of the proofs available in the commentaries and sub-commentaries on the *Jiuzhang Suanshu*
- Proofs are a method of demonstrating the logical arguments underlying a mathematical result.
- The majority of important Chinese mathematicians between 1000 and 1500 would have known of the *Jiuzhang Suanshu*
- The authors of the *Jiuzhang Suanshu* do not make any claim justifying their own authority.

Learn More About Magoosh | Question 1 of 1 | Submit Answer | Learn More

Try this question online and watch the video explanation:
http://gmat.magoosh.com/questions/3623/

Introduction to Critical Reasoning

One question on the GMAT Verbal Section is Critical Reasoning. On this question, the prompt presents some sort of argument, and then asks you, in one way or another, to analyze the argument — for example, by strengthening it, weakening it, finding its underlying assumption, etc. The argument prompt is typically less than 100 words, much shorter than a Reading Comprehension passage, and most often, there's only a single question on the CR argument. CR comprises roughly 1/3 of the Verbal Section, about 13 CR questions of the total of 41 Verbal Questions.

Why does the GMAT ask CR? Why does it matter?

You are preparing for the GMAT, which ostensibly means you are planning on attending business school, which in turn suggests that you are anticipating a management career in some aspect of the business world. The entire business world runs on buying and selling: even if you are not a salesperson yourself, the success of your business, in a sense the ***raison d'etre*** of the business, is the money it makes from sales.

Well, in its essence, every sale is an argument. If I want to sell you sometime, I have to present a case in some form to convince you to buy it. If I make a wonderfully cogent argument, I may well generate the sale. If my argument is faulty, and I repeat this pattern, that can only mean bad things for the long-term financial well-being of my business. Arguments are important in business, and the skill of evaluating arguments is one that every manager should cultivate. That's precisely why business schools want you to bone up on it, which is why the GMAT asks about it in CR questions.

The 8 Types of CR Questions

Nearly all of the CR questions fall into one of the following eight categories.

1. Weaken the Argument
2. Strengthen the Argument
3. Find the Assumption
4. Draw a Conclusion/What Can Be Inferred?
5. What is the Structure of the Argument?
6. What is the Flaw in the Argument?
7. Paradox Questions
8. Evaluate the Conclusion

As I explain in the next section, finding the assumption can help not only with question type #3, but also with either strengthening or weakening the argument.

Arguments and Assumptions on the GMAT

Isolating the Nerve Center of an Argument

Arguments in real life can take a number of forms, but arguments on GMAT Critical Reasoning questions are relatively formulaic. The typical GMAT argument has three parts:

1. Premise: the starting point of deductions; often, agreement to this is assumed.
2. Conclusion: what the author wants you to believe by the end of the argument
3. Assumption: the **unstated** link between premise and conclusion.

   Although unstated, the assumption is the nerve center of the argument, the linchpin holding the whole thing together.

Strengthening and Weakening Arguments

Assumptions are crucial in understanding an argument, and because of this, they play a large role in two major Critical Reasoning question types. Some questions ask you: "Which would most strengthen the argument?" The most powerful way to strengthen an argument is to validate its assumption. Other questions, perhaps the single most common on Critical Reasoning, ask: "Which of the following would most weaken the argument?" The most devastating attack on an argument is the denial of its assumption — without the assumption, the link between the premise and the conclusion is severed.

Think Broadly

When identifying assumptions, one crucial point to remember: assumptions are most often general statements, not specific statements. If my premise is "Fred has quality A," and my conclusion is "Therefore, Fred has quality B," then the assumption is not going to involve Fred at all. The assumption would be something like "most/all folks who have quality A also have quality B." In trying to identify the assumption, it can helpful to remember that you can omit any specific people/places/items mentioned.

Identifying the Assumption

Consider, first of all, this relatively ludicrous argument:

Hawaii is a place with beautiful scenery. Therefore, people there must have trouble concentrating for any length of time at all.

The premise: Hawaii is a place with beautiful scenery — we can safely assume that at least 99 out of a hundred people would agree with that! The wacky conclusion: people there can't concentrate. The assumption must provide a link.

Hawaii is the specific, so drop that. The premise has to do with "place with beautiful s[illegible]nd the conclusion has to with "trouble concentrating", so just put those together with a str[illegible] connection: "People in places with beautiful scenery generally have trouble concentrating." There! That's a possible way to state the assumption. It would most strengthe[illegible] this laughable argument if one could somehow provide data or evidence supporting this assumption. It would shatter this poor argument if we could cite data or evidence that directly contradicts the assumption.

Now, consider a somewhat more GMAT-worthy argument:

Of all the companies in the steel industry in the last six months, only Amalgamated Ferric Industry (AFI) has tripled their advertising expenditures. No other steel company has increased advertising nearly that much. Therefore, in the coming months, we should see AFI gaining new customers at a rate that outpaces all its competitors.

Dropping the specifics, the premise is about increasing spending on advertising, and the conclusion is: more new customers. An assumption would link these. A very broad assumption: "companies that increase what they spend on advertising generally see an increase in new customers." A slightly more specific assumption: "when companies in the steel industry increase advertising, this generally results in more new customers." This is a relatively poor argument, and if we were asked for a statement to weaken it, the best choice would be something that zeroed in on the assumption. For example: **studies of companies in the steel industry show little correlation between advertising dollars and new customers**. That strikes right at the nerve center of the argument, obliterating it. That's exactly what this kind of GMAT Critical Reasoning is asking you to do.
On the real GMAT, if you can anticipate what the best answer choice will look like, that will make it much easier to find!

Save Time on GMAT Critical Reasoning Questions

Know Your Job

Step one of the general strategy for GMAT Critical Reasoning is: read the question before reading the argument. Know which type of question you are going to have to answer, and read the argument with that question in mind. The eight broad categories of GMAT CR questions are

1. weaken the argument
2. strengthen the argument
3. find the assumption
4. draw inference/conclusion
5. structure of the argument
6. identify the flaw in the argument
7. paradox
8. evaluate the conclusion

Types #1-4 account for approximately ¾ of all GMAT CR questions. You can find out more about each one of these types in the CR video series in the Magoosh product. The basic idea is: when you know what you need to do, you will be reading the argument with that in mind.

Know What You're Looking For

In all CR questions, the GMAT gives one correct answer and four tempting and potentially confusing statements for the other choices. Folks who read the argument & question, and then wander aimlessly into the answer choices without any further thought are asking to be perplexed, and chances are, they spend much longer than necessary on many CR questions.

Go into the question with an idea of what you seek. For types #1-3, the best thing to do is to find the assumption of the argument —- reaffirming or undercutting the assumption of an argument is the most powerful way to strengthen or weaken it. Finding the assumption may also be helpful in find the flaw of the argument (if the flaw is a faulty assumption).

For the other question types, you will be less able to predict what the answer will be, but still formulating the task in your own words will help you. In your own words, what is the structure of the argument? What is the paradox that needs to be resolved? What kind of information would be required to evaluate the conclusion? The clearer you can be on what type of information or argument will satisfy the question, the quicker you will be in finding it.

If you can simply integrate these strategies, you will find you are able to crack GMAT C
Reasoning questions faster and more accurately.

Formal Logic and GMAT Critical Reasoning

I'll begin with a typical GMAT Critical Reasoning Question. As a case study, consider this que from the OG13e, CR #115 (OG12e, CR #114):

Guidebook writer: I have visited hotels throughout the country and have noticed that in those built before 1930 the quality of the original carpentry work is generally superior to that in hotels build afterwards. Clearly carpenters working on hotels before 1930 typically worked with more skill, car, and effort than carpenters who have worked on hotels build subsequently.

Which of the following, if true, most seriously weakens the guidebooks writer's argument?

A. The quality of original carpentry in hotels is general far superior to the quality of carpentry in other structures, such as houses and stores.
B. Hotels build since 1930 can generally accommodate more guests than those build before 1930.
C. The materials available to carpenters working before 1930 were not significantly different in quality from the materials available to carpenters working after 1930.
D. The better the quality of original carpentry in a building, the less likely that building is to fall into disuse and be demolished.
E. The average length of apprenticeship for carpenters has declines significantly since 1930.
F. It may be helpful to think through this question on your own before you read the full analysis below.

Do you need to study formal logic to master the GMAT Critical Reasoning?

The short answer is: no. If you have studied formal logic, then chances are good that the "muscles" you developed in those studies also will help you with CR. But, if you have never studied formal logic, don't go out of your way to read up on Quine. It's somewhat beside the point.

Formal Logic vs. Contextual Logic

On the GMAT CR, you will not see words like "necessary", "sufficient", "if and only if" —- i. e. the words of formal logic. You will see an occasional if-then statement, and other statements that could be recast as if-then statements, but results of formal logic are very seldom at the heart of what the CR is testing.

CR is all about what I would call contextual logic: here's a real world scenario, and given the unique particularity of this situation, what would make the most sense in context? In many CR question, the correct answer provides new information that you have to integrate with the understanding developed from the prompt. It's rare that you can "logically deduce" the correct answer purely from the prompt, without any reference to the answer choices. It's true that, for certain CR question types, it's helpful to anticipate the answers before you start analyzing the

answer choices, but the point is: pure logic is not enough. You must be sensitive to the ...ty of the context.

An Example of CR Logic

Let's go back the CR questions at the head of this article.

Guidebook writer: I have visited hotels throughout the country and have noticed that in those built before 1930 the quality of the original carpentry work is generally superior to that in hotels build afterwards. [This is a factual observation.] Clearly carpenters working on hotels before 1930 typically worked with more skill, car, and effort than carpenters who have worked on hotels build subsequently. [This is a conclusion that would explain the factual observation.]

We are asked to weaken the argument. This means, we have to find another explanation for the factual observation (pre-1930 have good carpentry) that would support it even when the conclusion (pre-1930 carpenters were better than carpenters since) is false. In other words, even if pre-1930 carpenters are no better than later carpenters, why would the critic still observes much higher proportions of good carpentry in pre-1930 hotels?

Notice, some logical reflection has clarified our task for us, but there's really no glaringly obvious alternate explanation for the higher proportions of good carpentry in pre-1930 hotels. We will have to look for relevant perspectives among the answer choices.

A. *The quality of original carpentry in hotels is general far superior to the quality of carpentry in other structures, such as houses and stores.*

   True, but not helpful. Pre-1930 hotels had better carpentry than pre-1930 houses and stores. Post-1930 hotels have better carpentry than post-1930 houses and stores. This fact does not explain why any difference would not be apparent between pre-1930 hotels and post-1930 hotels.

B. *Hotels build since 1930 can generally accommodate more guests than those built before 1930.*
   How many guests a hotel can accommodate has virtually no bearing on the quality of the carpentry. If the observations about differences in quality of carpentry were made from some kind of survey of hundreds of hotel guests, perhaps we could deduce that more had stayed in pre-1930 hotels simply because those hotels can accommodate more guests. But, the observation was in fact made by a single guidebook writer, a single person, who presumably stayed in a very large number of hotels. That person's conclusions presumably would have absolutely nothing to do with how many other people are staying in the hotel. This fact may well be true, but it's irrelevant to this argument.

C. *The materials available to carpenters working before 1930 were not significantly different in quality from the materials available to carpenters working after 1930.*

Same materials in both time periods would not provide an alternative explan[illegible]he difference in quality between pre-1930 and post-1930 hotels. In fact, arguably, would **strengthen** the argument, not weaken it.

D. *The better the quality of original carpentry in a building, the less likely that building to fall into disuse and be demolished.*

This is fascinating. Old buildings with fine carpentry are more likely to be around still. Old buildings with mediocre carpentry are more likely to be no longer with us. Remember, the guidebook writer was implicitly speaking of proportions. The factual observation was, essentially: if we look at the proportion of pre-1930 hotel that have fine carpentry, and the proportion of post-1930 hotel that have fine carpentry, then the first proportion is greater than the second proportion. The guidebook writer argued that differences in the quality of the carpenters caused this difference in proportions.

This new fact provides an alternative explanation. Suppose carpenters now are just as good, just as skillful and careful, as carpenters from before 1930. For simplicity, suppose, on average, 3% of hotels built have fine carpentry, and the other 97% have mediocre/substandard carpentry, and assume that was just as true before 1930 as it is now. For hotels build before 1930, essentially all of those hotels with poor carpentry would have been knocked down, and the only ones still standing would be the 3% that had fine carpentry. Thus, when the guidebook writer goes to pre-1930 hotels still standing, still in service, the carpentry in almost all of them is of high quality. By contrast, hotels build in the past decade are all still standing, regardless of the quality of the carpentry. When the guidebook writer goes to these, only 3% have fine carpentry, and the rest do not. Thus, the guidebook writer could experience vast differences in the proportion of hotels with fine carpentry, and it would have nothing to do with the inherent quality of the respective carpenters. This is the correct answer.

E. *The average length of apprenticeship for carpenters has declines significantly since 1930.*

If anything, this would **strengthen** the argument. It would explain why pre-1930 carpenters would be more skillful. This does not weaken the argument.

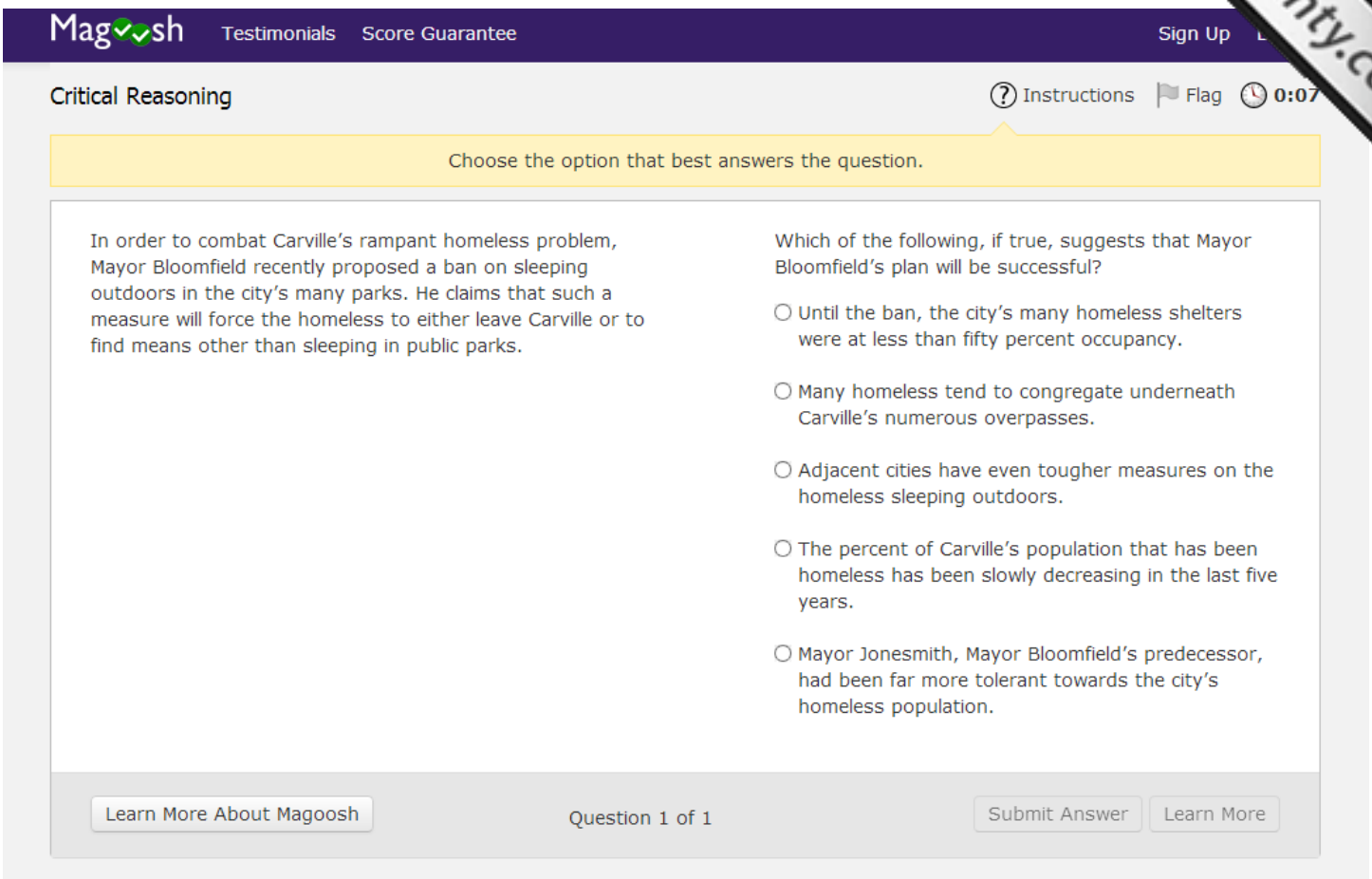
Notice that we were asked to weaken the argument, and a couple of the answers did the opposite: provided information to strengthen the argument. That's a typical GMAT CR pattern. Similarly, when you are asked to strengthen an argument, expect to see a couple answer choices that weaken the argument.

Notice, also, in all five answer choices, our reasoning was deeply bound to the context itself. We had to think through the details of the context to separate what was relevant from what was not relevant. That is quite different from the exercises of formal logic, which tends toward abstraction. GMAT CR logic is all about getting our hand dirty in the rough and tumble of real-world issues. That what the GMAT asks you to do because, once you're a manager with your MBA and

you're out in the business world making decisions, that's precisely what you are going [illegible] all day every day in your job.

If you want to improve your GMAT CR logic, don't read textbooks on formal logic. *Read The W[illegible] Street Journal* and *The Economist* magazine: they both elucidate clearly the logic needed in the business world.

Practice Question



Try this question online and watch the video explanation:
http://gmat.magoosh.com/questions/3413/

Introduction to GMAT Sentence Correction

Why Sentence Correction?

Why does the GMAT test Sentence correction? Why do business schools care about grammar? Isn't business about the bottom line? What do the niceties of speech have to do with that hard and fast reality?

Well, think about it. In the typical business environment, think about all the people with whom you have to relate professionally, both near and far. With what percent of them do you interact exclusively face to face or through the telephone? Probably, a relatively small percentage. In the modern global market, there will always be important remote players, with whom we have to interact primarily or exclusively through the written word: email, memos, reports, documents. If you send out something professional, and it has more than one grammar mistake in it, many people thereby will assume (fair or not) that you are less intelligent and less capable, and they may well be that much less inclined to extend valuable opportunities to you. Poor grammar makes even the most original and exciting ideas sound less appealing. Every time you create words and send them into profession circulation of any kind, you are advertising yourself. Every time you put something in writing into profession circulation, it should represent you at your very best, and an important part of that is correct grammar. That's why business schools care about it, which is why the GMAT tests it. The primary vehicle for testing grammar on the GMAT are Sentence Correction questions.

The format of GMAT Sentence Correction

Every GMAT Sentence Correction will present a complete sentence prompt, with a section of the sentence underlined. Answer choice A will always be the underlined text, unchanged. Answer choices B – E will present alternatives to the underlined text. Your job is to choose the answer choice that is best – it may not be ideal, the best sentence conceivable, but it will be the best of the five choices available.

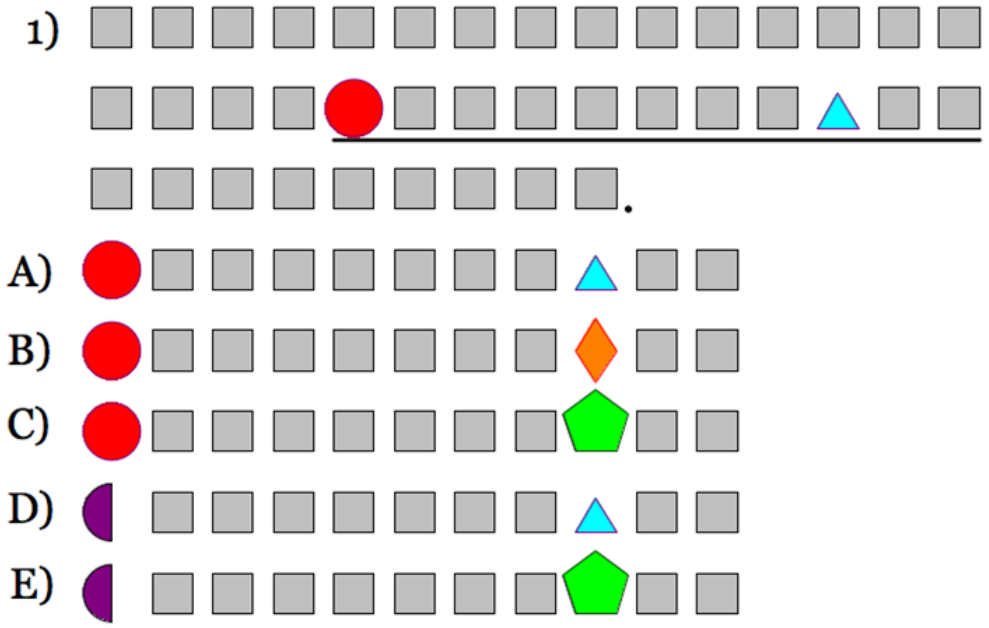
What makes one answer the best? The GMAT is looking simultaneously at three criteria: grammar, unambiguity, and concision. Almost every Sentence Correction will test some points of English grammar: a good sentence has no grammatical errors. Some questions also have answer choices that contain ambiguity – for example, "Fred told Andrew that he liked his car better" (whose car did Fred like better???) A good sentence is univocal and clear, free from ambiguity. Finally, if two choices are both grammatically correct and unambiguous, the one that is more concise, less wordy, is preferable. These three constitute the content of GMAT Sentence Correction, and if sign up for Magoosh, you will see we have 39 detailed videos covering all the content you need to know to master GMAT Sentence Correction.

GMAT Sentence Correction Strategies

So, when you are faced with a GMAT Sentence Correction question, the proper thing to do is read the prompt carefully, and then read all five answer choices carefully, right? WRONG! That's an absolute trainwreck approach, guaranteed to cost 5+ minutes per question. You can't afford to work that slowly on the GMAT! You need an approach that maximizes efficiency!

The Efficient Approach to GMAT Sentence Correction

The suggested approach above is partially correct. You ***should*** read the prompt sentence carefully, noting any grammatical mistakes and any possible areas for improvement. You should NEVER have to read Answer Choice A, since it's identical the underline text in the sentence. After reading the sentence, you should **not read** but **scan** Choices B, C, D, & E, looking for patterns.
The diagram below shows, schematically, a typical Sentence Correction question.



Pretend that the grey boxes are just the information of the sentence, blah, blah, blah. Let's say that the red circle and the sky-blue triangle represent words or phrases in the original sentence that don't sound quite right – they are either grammatically incorrect, or ambiguous, or too wordy. Then we **scan** the answer choices. One pattern we see is that the sky-blue triangle has two alternatives: the orange diamond and the green pentagon. Let's pretend that, of those three options, the green pentagon is the best. Right there, we have narrowed things down to choices (C) or (E) only. The other options we have to evaluate are red circle vs. purple semicircle. Let's pretend that that the purple semicircle is preferable. That very quickly isolates (E) as the best choice. Once you think you have the best answer, always carefully reread the sentence with the answer you have chosen. Ideally, you only have to read word-for-word two things – the original prompt sentence, and the new sentence with the answer choice you have selected.

Applying the Strategy

Admittedly, this example is a little simplified. Sometimes, the alternatives on the real GMA
not quite as easy to recognize. It's always true, though, that there will be similarities and pa
among the five answer choices of Sentence Correction. This means, it's always the most powerf
Sentence Correction strategy to read carefully only the prompt sentence, then scan the answer choices, eliminating based on comparisons of similarities and differences. You may be able to narrow the choices down to one simply through scanning, but even if you narrow it down to two, much better to read word-for-word only two answer choices instead of all four! If you can master this strategy, you will maximize the efficiency with which you handle these challenging questions.

GMAT SC: Wordy vs. Concise

Concision is a good thing on GMAT SC, but can you have too much of this good th

As a general rule on GMAT Sentence Correction (and in life!), wordy is bad. For example:

Buck Mulligan, who was a somewhat chubby person but who bore his weight with a kind of dignity, came from the head of the staircase, and he was carrying a bowl full of soapy lather, and on the top the bowl was a mirror and also a razor, and the mirror and razor were crossed on the top of the bowl.

Yuck! Now, compare this:

Stately, plump Buck Mulligan came from the stairhead, bearing a bowl of lather on which a mirror and a razor lay crossed.

There are good reasons why James Joyce chose the latter, not the former, for the first sentence of his masterpiece *Ulysses*. If the former had been the first sentence, few people would have wrestled with the rest of that notoriously difficult tome.

Much in the same way, folks will lose focus reading your memos and reports in the business world if those documents are needlessly wordy. Business schools know this, which is why they value the Sentence Correction section of the GMAT.

Too Short: Words Crammed Together

Shorter is often better, but it's possible to get too short. One type of "too short" consists of words crammed together. For example:

The Chicago plumber was visiting Tallahassee.
Frank parks his firewood hauling truck behind the fence.

For example, in the first one: what exactly is a "Chicago plumber"? It implies that the entire city is some vast system of gaskets, and this guy specializes in keeping those municipal gaskets in shipshape. Of course, that's not what is meant. What is meant is: the plumber is from Chicago. Similarly, there are special kinds of trucks (e. g. fire truck, dump truck, etc.), but a "firewood hauling truck" is not one. Here are corrections to those sentences:

The plumber from Chicago was visiting Tallahassee.
Frank parks his truck, in which he hauls firewood, behind the fence.

Too Short: Illogical Equivalents

Another variety of "too short" consists of implying things are the same that just aren't. For example

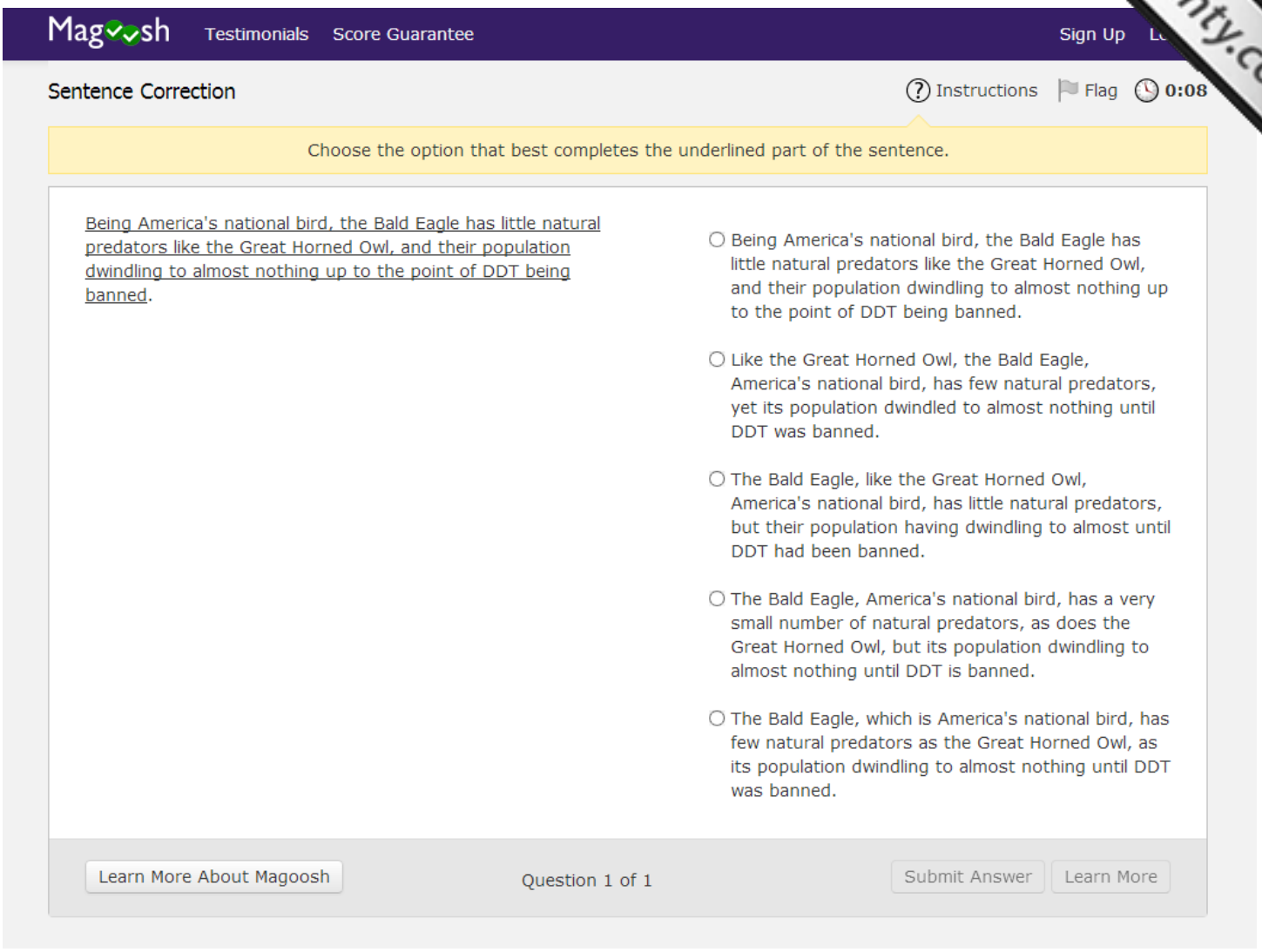
The time I love most is eating ice cream.
The voice that scares me most is my father angry.

Admittedly, in colloquial speech, folks talk this way. On the GMAT, though, these are unacceptable. The first illogically implies "eating ice cream" is a specific "time", in the same way that Halloween or 2 pm is a specific time. The illogically equates a person, the speaker's father, with a "voice." The correct versions of these are a little longer:

The time I love most is when I eat ice cream. (or, what contains essentially the same information . . .) **I immensely enjoy eating ice cream.**
The voice that scares me most is that of my father when he is angry.

Pay attention to ways these two kinds of "too short" constructions show up in everyday speech. When you hear one, write it down, and then try to correct it up to GMAT Sentence Correction standards. With practice, you will master the skill of making sentence short but not too short — a skill that will serve you well on the real GMAT.

Practice Question



Try this question online and watch the video explanation:
http://gmat.magoosh.com/questions/3276/

Exam Mindset

Overcome GMAT Exam Anxiety: Breathe!

You study for months, mastering concept after concept, practice test after practice test, and then on the big day, in front of the test itself, you are so nervous that you psych yourself out. How to avoid this? This series of articles presents a few ideas that have the potential to transform your experience of performing under pressure, on the GMAT and beyond.

The Breath

This recommendation, at first blush, is going to sound like the oldest cliché in the book: breathe deeply. Before you completely dismiss this, let me talk for a moment about neuroanatomy.

The Autonomic Nervous System

Parts of our nervous system are under our conscious control: thoughts, skeletal muscle motion, etc. Beyond that, there are circuits that run everything over which we have no conscious control. This is the Autonomic Nervous System, which takes care of digestion, kidney and liver functions, healing, etc. The Autonomic Nervous System has two complementary sections: SNS & PNS.

The Sympathetic Nervous System

The first is the Sympathetic Nervous System (SNS): this is the system that revs us up in excitement, fear, or stress. When the SNS is activated, adrenaline & cortisol levels rise, heart rate increases, breathing becomes more rapid and more shallow, digestion & immune function & libido are inhibited, muscle tension increases, and blood is directed more toward the outer musculature (as would be needed in fight or flight). A little bit of SNS arousal is good every day, but prolonged SNS arousal with rare breaks, over the course of months and years, has potentially disastrous effects on long-term health.

The Parasympathetic Nervous System

The second is the Parasympathetic Nervous System (PNS), the so-called Relaxation Response. When the PNS is activated, adrenaline & cortisol levels decline, heart rate decreases, breathing becomes slower and deeper, digestion & immune function & libido are enhanced, muscle tension decreases, and blood is directed more toward the inner organs. This state facilitates focus, concentration, recall, and insight.

SNS/PNS and Test-Taking

Of the two branches, which is more helpful on a big test like the GMAT? Well, to excel, you to be energized enough that you are not apathetic or falling asleep, but beyond that minimal of SNS arousal, you should be relaxed, in PNS arousal. There, your intuition has the greatest free play, and you will be better positioned to draw on your potential.

The "On Switch" for the PNS

If you are in SNS arousal, how do you get to the PNS state? This is the magic of the breath. One can't consciously direct one's heart rate or cortisol levels, but by consciously taking slower and deeper breaths, that stimulates the PNS and all its effects. This is one of the many benefits, for example, of meditation. The breaths have to be very big: comparatively short in-breaths that expand the whole belly & whole chest, and then comparatively slow out-breaths. If you practice this regularly, you will feel the effects. Practice sitting in traffic, in meetings, standing in line. Practice before (or during) a stressful discussion with your boss or lover. If you practice this skill enough to develop some proficiency in relaxing yourself by the time you take the GMAT, you will be giving yourself one of the powerful overall advantages you possibly could have.

Mindfulness

Mindfulness is open-ended awareness. If I move through my life with mindfulness, I am curious, perceptive, and present to my present circumstances. To be mindful is to notice the often overlooked taken-for-granted details of everyday life. To practice the skill of mindfulness, one might, for example, try to notice one new thing on one's way to work each day, or try to notice each day one new sight or perspective in a place you ostensibly know very well. Mindfulness is can be externally focused on the environment, and can also be internally focused: how does my body feel right now? What is the quality of my breath? Are my muscles relaxed? What emotions are passing through me? What thoughts are running through my head? To be mindful is never to be too far away from such questions, never to completely lose track of the primary feelings of one's self in the rush of outer events.

Benefits of Mindfulness

In recent years, psychologists have amassed a small mountain of data demonstrating the enormous benefits of mindfulness practices. Jon Kabat-Zinn is one of the leading authors in this burgeoning field. Several books & workshops are available that can assist one in developing mindfulness practices. Mindfulness practice can reduce stress, and increase both clarity and perceptivity.

Mindfulness and the GMAT

Consider for a moment your practice GMAT questions: how many times have you gotten a question wrong, only to go back and realize that you misread it or overlooked an important subtlety? Yes,

that's what many people would call a "silly" mistake, and the truth is we all make mo[illegible] than we would like. What would it mean for your GMAT score if you could drastically red[illegible] number of those mistakes you make? If you develop a mindfulness practice, enough to have[illegible] familiarity with it before you sit for the GMAT, then you will be able to walk into that test and[illegible] each question with the same careful eye and open-ended curiosity you have been practicing elsewhere. Your mind will be clearer, and you will feel less stress.

Of course, there's a chance that being mindful of customers' requests, mindful of connections with others, and mindful of cool-headed priorities in the heat of the moment might pay dividends in your career far beyond the GMAT. And, you'll be happier.

The GMAT, Business School, and You: The Big Picture

There's an old Chinese parable that runs something like this:

One day, an old farmer was working in his field with his old horse. When the farmer turned his back, the horse unexpectedly ran into the mountains. Soon after, neighbors from the nearby village visited, offering their condolences and said, "What a shame. Now your only horse is gone." The farmer replied: "Who knows? We shall see."

Two days later the old horse came back, now rejuvenated after a bit of freedom in the mountainsides. He came back with a few new younger and healthy horses which followed the old horse into the corral. Word got out in the village of the old farmer's good fortune and it wasn't long before people stopped by to congratulate the farmer on his good luck. "How fortunate you are!" they exclaimed. "You must be very happy!" Again, the farmer softly said, "Who knows? We shall see."

At daybreak on the next morning, the farmer's only son set off to attempt to train the new wild horses, but the farmer's son was thrown to the ground and broke his leg. One by one villagers arrived during the day to bemoan the farmer's latest misfortune. "Oh, what a tragedy! You must be very sad," they said. Calmly going about his usual business the farmer answered, "Who knows? We shall see."

Several days later a war broke out. The Emperor's men arrived in the village demanding that young men come with them to be conscripted into the Emperor's army. As it happened the farmer's son was deemed unfit because of his broken leg. "What very good fortune you have!" the villagers exclaimed as their own young sons were marched away. "You must be very happy." "Who knows? We shall see!" replied the old farmer as he headed off to work his field alone.

As time went on the broken leg healed but the son was left with a slight limp. Again the neighbors came to pay their condolences. "Oh what bad luck. Too bad for you!" But the old farmer simply replied; "Who knows? We shall see."

As it turned out the other young village boys had died in the war and the old farmer and his son were the only able bodied men capable of working the village lands. The old farmer became wealthy and was very generous to the villagers. They said: "Oh how fortunate we are, you must be very happy," to which the old farmer replied, "Who knows? We shall see!"

Probably one story you have in your head is how good your life will be if you get the G… you desire and get into the school you want. You may also have a competing story, about… unpleasant it would be if you didn't get that score or had to go to this school instead of tha… school. Of course, there's nothing to say either of those stories have any truth to them. There… countless examples of folks who do brilliantly on the GMAT, go to great schools, but then for whatever reason are not as successful afterward. There are also folks who never did well on standardized tests, who went to schools that others would consider unworthy, but still are fabulously successful in their careers. Furthermore, while meditation and mindfulness practice are strongly correlated with greater happiness and fulfillment, wealth is absolutely 100% uncorrelated with overall life-happiness. So, incidentally, is GMAT score.

Wait a minute! It sounds like Mike is saying the GMAT doesn't matter. Not at all. My goal in this eBook is to support the readers in their success on the GMAT in whatever way I can. I want to encourage you in doing everything that can further your success: studying content, learning strategies, taking practice tests, etc. All that is wonderful. Your *stories*, though, about what it all means: that's a different matter. Your *stories* about what the future will be don't contribute bupkis to your GMAT preparedness. In fact, if the stories you tell yourself generate anxiety or distraction, then they are positively detrimental to your GMAT preparedness. The truth is: no one even knows what tomorrow will bring, let alone a year or decade from now. As the poet W. S. Merwin wrote: "Today belongs to the few; tomorrow, to no one."

We all imagine the future: that's nature. The problem is when we become convinced about stories about the future, and they cause us stress or fear or anxiety. It is often enough to "unplug" the emotional drama of a story simply to step back and acknowledge: of course, we don't know if that's how the future will turn out. None of us know what the future will be. What I am suggesting is a kind of detachment toward our stories. Detachment is very different from apathy. Apathy is cutting off, not caring. Detachment is a vital engagement that, rather than locking on to any one story, acknowledges, in all humility, that the future may well contain more than I can imagine right now. In fact, I would even argue: if your future turns out as you are able to imagine it right now, then that means you would be falling short of your potential, because your potential is always beyond what you can imagine.

As with what I have recommended in the other posts, this detachment from our stories about the future takes practice. After a big surprise or big disappointment, it takes practice to be able to say, like the Chinese farmer, "Who knows? We'll see." Of course, deep breathing and mindfulness practice will dovetail nicely with this practice. Insofar as you can practice this and develop this skill, you will find you have more of your focus and more of your emotional energy at your disposal in the present moment, and thus are ready to bring your best self forward on whatever is the task at hand. And ***that*** is precisely what I would wish for you on your GMAT.

Resources

Study Plans

Whether you're attempting to cram or are taking your time to study leisurely for the GMAT, it always helps to have a more structured schedule to keep you on track. Below are our recommended study schedules that include lists of suggested resources and checklists of specific tasks and goals for every day. Let us know how you like them!

- 1 Month Study Schedules:
  - Daily Version: http://magoosh.com/gmat/2012/1-month-gmat-study-schedule/
  - Weekly Version: http://magoosh.com/gmat/2012/30-day-gmat-study-schedule/

- 3 Month Study Schedules:
  - Version A: For Beginners: http://magoosh.com/gmat/2012/3-month-gmat-plan-for-beginners
  - Version B: Math Focused: http://magoosh.com/gmat/2012/3-month-gmat-study-schedule-math-focused/
  - Version C: Verbal Focused: http://magoosh.com/gmat/2012/3-month-gmat-study-schedule-verbal-focused/
  - Version D: For Advanced Students: http://magoosh.com/gmat/2012/3-month-gmat-study-schedule-for-advanced-students

- 6 Month Study Schedule: http://magoosh.com/gmat/2012/6-month-gmat-study-schedule/?

Sign up for Magoosh GMAT!

We give you everything you need to start studying today.

http://gmat.magoosh.com/