



How to Visualize+Prethink

“Strengthens”

No other GMAT Prep company teaches this GMAT Pill trick

Know this trick and:

- **Comprehend CR question stems with ease**
- **Eliminate answer choices (for ~50% of CR questions) so fast – it’s almost an unfair advantage**



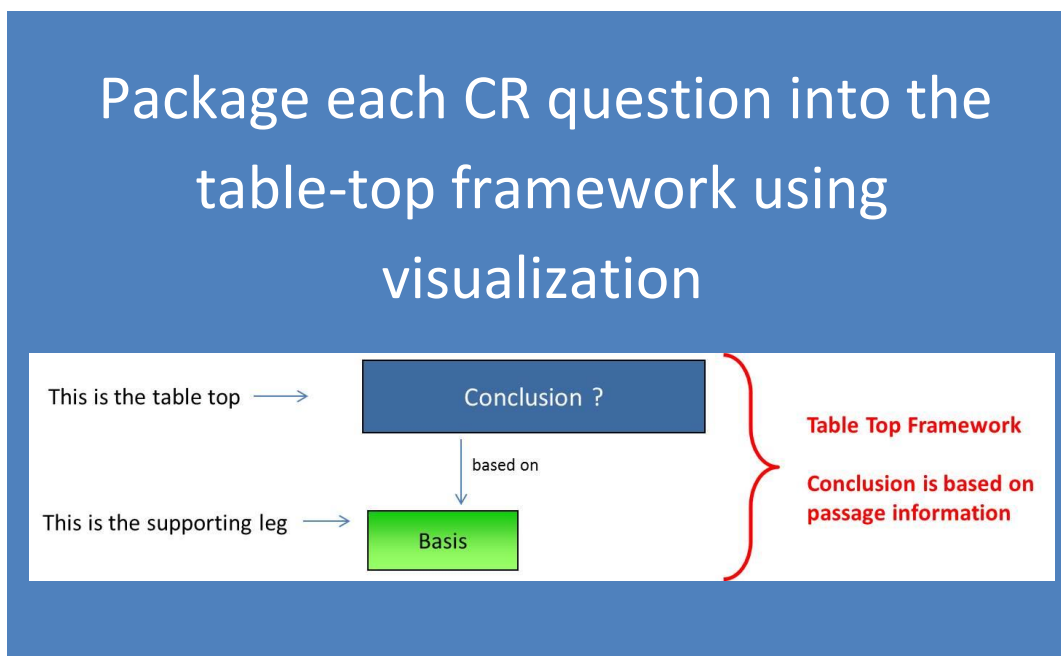
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No other GMAT prep company teaches this trick.

This trick is:

- Easy to apply
- Works for all CR questions
- Improves your ability to quickly eliminate answer choices by a significant %
- Decreases the amount of time you spend on each CR question
- Improves your CR accuracy and confidence

Here's the rule:



That's it?

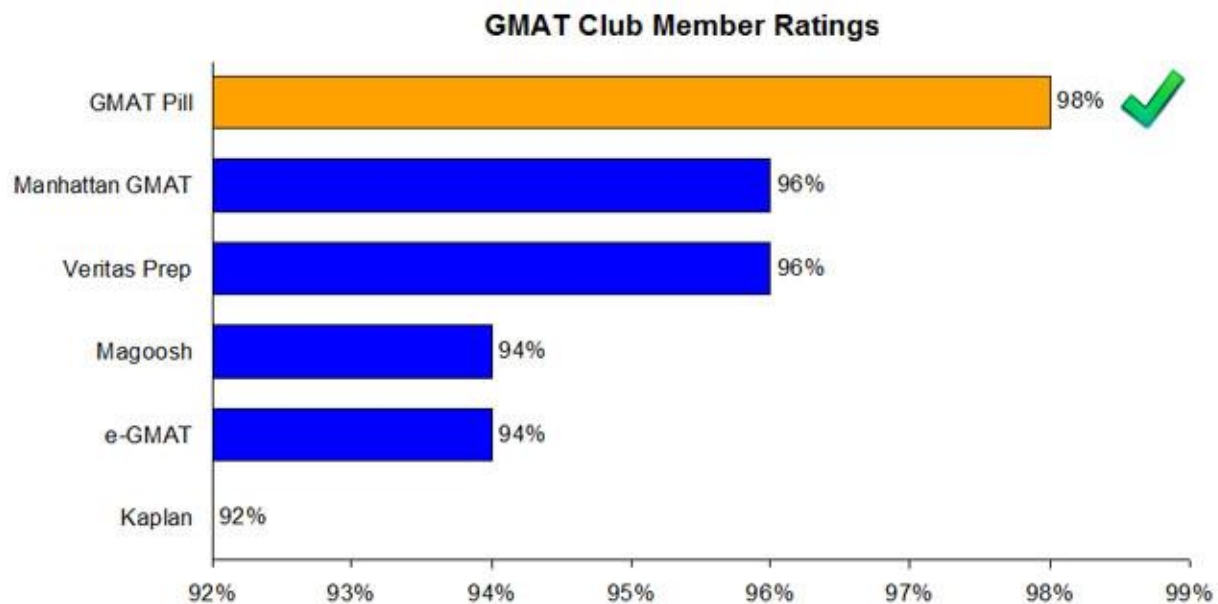
Yes. Once you figure out how to visualize a CR question in this context, you'll start seeing patterns and frameworks. Once you get these down, all of CR becomes a quest of simply identifying the appropriate CR Framework and solving it.

First, a bit about GMAT Pill...

Founded in 2009 by Zeke Lee, Stanford Graduate

Mission: To offer high-quality GMAT prep at a fraction of the cost in order to level the playing field in MBA admissions.

Top-Ranked Video Course on GMAT Club



GMAT Pill has more official score reports from students posted on our homepage than any other prep company.

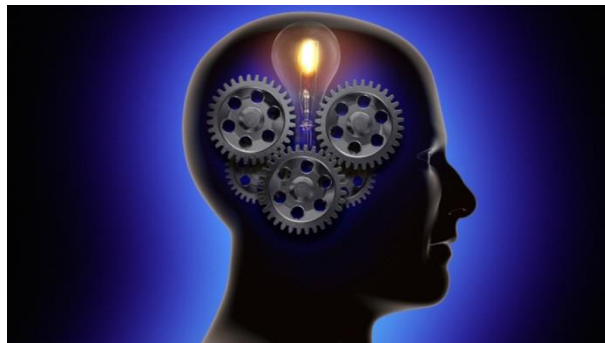
About GMAT Pill

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Focus on how to think – thought process efficiency.



About GMAT Pill

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Students don't improve until they take the GMAT Pill...

Test Taker Information

Telephone Number: [REDACTED]
 E-mail Address: raghu [REDACTED]
 Date of Birth: [REDACTED]
 Gender: Male
 Country of Citizenship: India
 GMAT ID: [REDACTED]
 Appointment Number: [REDACTED]

Verbal: 11 pt improvement!
V25 to V36

Optional Test Taker Information (Self-Reported)

Graduation Date: June 2009
 Undergraduate GPA:
 Highest Education Level:
 Undergraduate Institution:
 Undergraduate Major: Engineering
 Intended Graduate Study: Full-time student

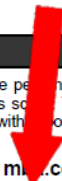
From 570 to 620 to 710!!

Test Information (Score / % Below)

For the Quantitative, Verbal, Total and Analytical Writing sections, the percentages shown below represent the proportion of tests taken in the previous three years with reported scores lower than this score. The percentage shown below for the new Integrated Reasoning section represents the proportion of IR tests taken so far with reported scores lower than this score. This percentage is updated monthly for the first six months and annually thereafter.

To view the most recent percentile table, please visit magoosh.com. See below for alphabetic score key.

Test Date	Verbal	Quantitative	Total	Analytical Writing	Integrated Reasoning
25 October 2012	36 / 79%	49 / 83%	710 / 92%	5.5 / 77%	7 / 81%
08 August 2012	25 / 36%	49 / 83%	620 / 69%	5.5 / 77%	6 / 67%
04 July 2012	30 / 56%	46 / 71%	620 / 69%	5.5 / 77%	3 / 24%
30 March 2012	23 / 30%	45 / 68%	570 / 53%	6.0 / 90%	~ / ~



Introduction to “Strengthens” CR Questions

“Strengthens” questions are the most popular type of CR question on the GMAT. An analysis of the Official Guide 13th edition by GMATPill shows that over 50% of OG CR questions are “strengthens” questions.

At GMATPill, we categorized 124 OG13 questions as follows:

31% General Strengthen

20% Weaken

12% Helps Explain

10% Bold / Identify Structure of Argument

10% Evaluate the Argument

9% Argument Depends

8% Inference

100% Critical Reasoning

“Strengthen” questions include all the bolded sections above: 31% General Strengthens, 12% Helps Explain, and 9% Argument Depends.

Together, that’s $31\% + 12\% + 9\% = 52\%$ of CR.

While we categorize these questions as 3 separate types, these are ALL “strengthen” questions and between these 3 categories, they all utilize the same overlapping frameworks. **So if you learn the framework strategies for these types of questions, you can develop a weapon that gives you a real advantage to efficiently solve more than half of the CR questions on the exam.**

Within the Strengthens category, we broke out “Helps Explain” and “Argument Depends” because there a number of such questions phrased this way. There is a slight nuance for these question types from other “general strengthen” questions but we’ll get into that another day.

Visualization + Prethinking Strategies for Strengthen

In this article, we want to introduce visualization and pre-thinking strategies for CR Strengthens questions (Part 1).

Visualization has helped thousands of GMAT Pill students better grasp the material in a CR passage. It is the foundation for the GMAT Pill approach to CR. For most CR questions, there is an extra strategy or technique you can use to derive the answer. We call these strategies “Frameworks” – and these frameworks can increase your speed and accuracy significantly.

Before we get to Framework strategies, let’s get the basics down right. That means visualization.

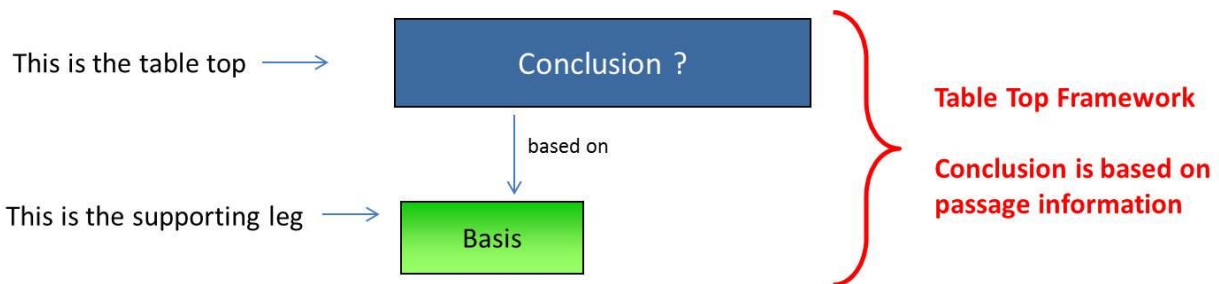
Visualization within the context of GMAT Pill’s Table-Top Framework

Arguments have two parts:

- 1) Conclusion
- 2) Assumption / Premise / Support

Within the GMAT Pill Table-top Framework, it looks like this:

- 1) Table-top: Conclusion
- 2) Supporting Leg: Support / Premise / Assumption



Typically, the strategies for strengthening a CR question will zone in on the green part above – the supporting leg. How do we strengthen the basis? How do we know what is already mentioned as the basis will actually result in the conclusion? How do we know that the rationale for the basis is legitimate?

Strengthening the basis is the first visualization technique to solve CR.

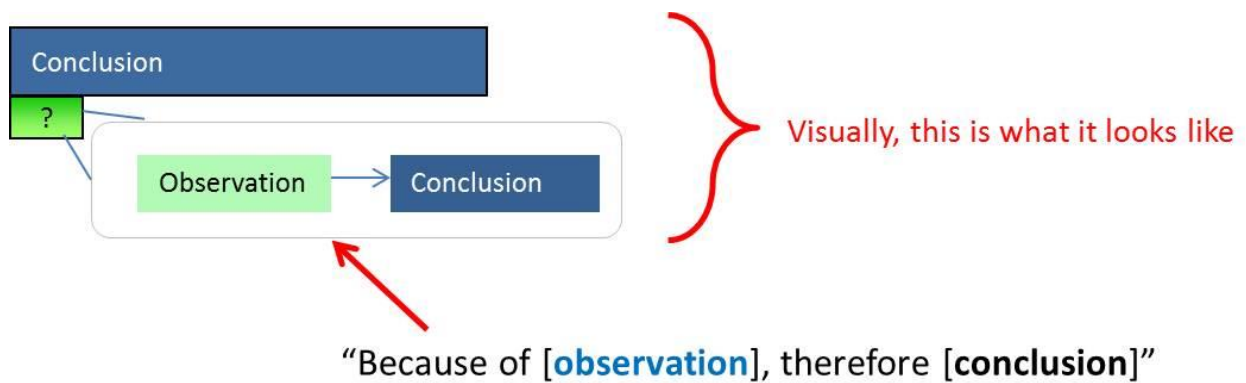
Conclusion Type: Observation → Conclusion

In the GMATPill online course, we cover 3 types of conclusions. For the sake of this example here, we'll focus on one of them.

The concluding statement will be structured like this:

Observation → Conclusion

Some observation will result in the author making a specific conclusion.



Notice how the table-top framework works. The conclusion rests on top and is supported by a supporting leg. We blow up that supporting leg which shows a connection between some “observation” and the “conclusion”. Presumably, for this to be true, there must be a valid link between the two and if we can confirm what exactly that link is, then we can STRENGTHEN the claim and thus strengthen the argument.

So what is that additional piece of information that more closely connects the “green” observation and the “blue” conclusion?

Well, let’s find out with a concrete example:

CR Example 1

Excavations in the summer of 2008 at the sites of Hohle Fels and Vogelherd revealed nearly a complete paleolithic ivory bone flute. This flute is by far the most complete of all of the musical instruments thus far recovered from the caves of Swabia. These finds demonstrate the presence of a well-established musical tradition at the time when modern humans colonized Europe, more than 35,000 calendar years ago.

Because the discovered ivory bone flute has 5 holes in it, enough to play 5 notes from the 7-note diatonic scale, musicologists believe that the diatonic musical scale was developed and used thousands of years before it became popular during the Renaissance period in Western Europe.

Which of the following, if true, most strongly supports the hypothesis?

- (A) Bone flutes were probably the only musical instrument made by Swabian cavemen.
- (B) The mammoth tusk bone used to make the Swabian flute would have been long enough to make a flute capable of playing a complete diatonic scale.
- (C) No musical instrument that is known to have used a diatonic scale is of an earlier date than the flute found in the Swabian cave.
- (D) Flutes are the simplest wind instrument that can be constructed to allow playing a diatonic scale.
- (E) The flute was made from a mammoth bone and the site at which the flute fragment was excavated was in a cave that also contained skeletal remains of woolly mammoths.

Now, for most people reading the above passage, there's quite a bit of confusion going on. First we talk about the flute, then we talk about a "well-established musical tradition", then we go to the holes in the flute and then something about a musical scale. Seems like we go back and forth between the flute and music several times.

So what is the best approach?

Well, that's why we recommend the GMAT Pill 3-step Approach.

- 1) Identify the conclusion
- 2) Visualize the Question
- 3) Pre-think the Answer

Doing all 3 steps is feasible in real-time once you get enough practice. And you'll notice how efficient it is over time.

Step 1: Identify the Conclusion

Typically the conclusion is the last sentence of the CR passage, though not always. Here it is. The last sentence has a sentence structure of "Because X, so Y".

Well, X must be the support. And Y must be the conclusion.

Excavations in the summer of 2008 at the sites of Hohle Fels and Vogelherd revealed nearly a complete paleolithic ivory bone flute. This flute is by far the most complete of all of the musical instruments thus far recovered from the caves of Swabia. These finds demonstrate the presence of a well-established musical tradition at the time when modern humans colonized Europe, more than 35,000 calendar years ago.

Because the discovered ivory bone flute has 5 holes in it, enough to play 5 notes from the 7-note diatonic scale, **musicologists believe that** the diatonic musical scale was developed and used thousands of years before it became popular during the Renaissance period in Western Europe.

Which of the following, if true, most strongly supports the hypothesis?

Notice the sentence structure starting with "because" hints to us that the conclusion will be in the second half of the sentence. The conclusion will come right after "musicologists believe that" ...what do they believe? Well, their belief is the whole point of the passage. Their belief IS the conclusion. That belief is Y.

X = flute has 5 holes in it

Y = diatonic musical scale was developed many years ago

Step 2: Visualize the Question

If you followed along with the course, you'll also see that this is an observation → conclusion.

Visually, it looks like this:



The conclusion is closely connected to the support and the connection here is dictated by the sentence structure ("because X, therefore Y").

So here some quick and easy questions that you can ask to challenge the basis above.

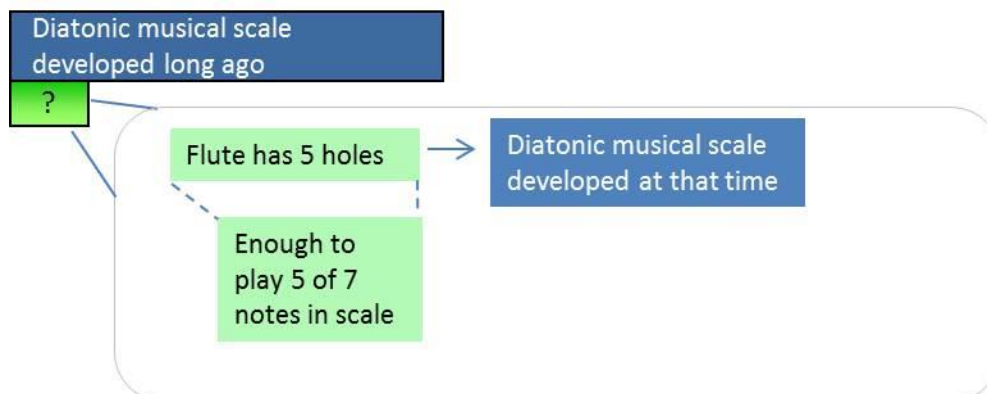
Does this mean every time we see a flute that has 5 holes in it, this means a diatonic music scale developed a long time ago?

OK, well specifically in the passage, this flute was a discovered flute from many years ago. Still, if we discovered a bone flute with 5 holes in it, how is this connected to music? How is it connected to a scale?

Well, this is partially answered in the passage. The connection between "flute" and "scale" is brought up by connecting the "5 holes" with "5 notes".

"enough to play 5 notes from the 7-note diatonic scale"

This is the connection between "flute" and "scale" that we are looking for. The connection is done through the "holes" in the flute with "notes" in a scale.



Step 3: Pre-think the Answer

Great, so we already have the connection. But wait, we still didn't answer the question. This is information already given. How do we strengthen this argument from this existing information we already have?

Looking back out our visualization, we do have a connection between the "observation" of the flute and the "conclusion" about when a musical scale developed. That connection was that "holes" are linked to the musical scale because they can play "notes of the musical scale" – specifically 5 of the 7 notes.

Ask yourself, how do I make this connection even stronger? Can you link "holes" and "music" in any stronger way?

So before going into the answer choices, you already have something in mind that you're looking for. You're looking for an answer choice that more strongly connects "flute holes" and "musical scale". Think about these two things as you go through each answer choice.

Answer choices:

(A) Bone flutes were probably the only musical instrument made by Swabian cavemen.

Not relevant.

Mentions the flutes were the 'only instruments' made – but suggests nothing that a 5-hole flute specifically could be associated with a full musical scale existing long ago. Does not fit our pre-thinking strategy of connecting "flute holes" to "musical scale".

(B) The mammoth tusk bone used to make the Swabian flute would have been long enough to make a flute capable of playing a complete diatonic scale.

Yes. Mentions "long enough" – shows the 5 holes really could have been 7 holes originally. If so, these 7 holes could play 7 notes (not just 5 notes) of the 7-note musical scale. If so, we not only cover part of the musical scale (5 notes), we cover the complete musical scale (7 notes). This suggests a stronger connection between 'flute holes' and 'musical scale' and suggests that the conclusion is valid – that a diatonic musical scale was developed long ago .

(C) No musical instrument that is known to have used a diatonic scale is of an earlier date than the flute found in the Swabian cave.

Not relevant.

Mentions no earlier flute that has diatonic scale – but does not make any connection that a discovered flute with 5-holes in particular is associated with a musical scale. *Does not fit our pre-thinking strategy of connecting “flute holes” to “musical scale”.*

- (D) Flutes are the simplest wind instrument that can be constructed to allow playing a diatonic scale.

Not relevant.

Mentions “most ease to make scale with flute” – but ease does not help show that a 5-hole discovered flute in particular is associated with a musical scale existing. *Does not fit our pre-thinking strategy of connecting “flute holes” to “musical scale”.*

- (E) The flute was made from a mammoth bone and the site at which the flute fragment was excavated was in a cave that also contained skeletal remains of woolly mammoths.

Not relevant.

Mentions “made from mammoth bone” – but bone origins are not connected to musical scale. They do not show how a discovered 5-hole flute is associated with a musical scale. *Does not fit our pre-thinking strategy of connecting “flute holes” to “musical scale”.*

If you used the pre-thinking strategy we recommended (connecting “flute holes” with “musical scale”) – you would quickly see that 4 of the 5 answer choices were simply not relevant. They didn’t fit what we were expecting as an answer choice.

This is the beauty of pre-thinking your answer choice BEFORE looking at the answer choices. You save time reading and re-reading through answer choices – many times you get even more confused because you start reading what they tell you and start believing what it is they say. Sometimes, the answer choices may repeat something in the passage and simply by repeating, you may think that you have an answer choice that is strengthening the conclusion. But this is not the case.

The best way is to deconstruct the argument given using visualization – specifically by packaging what you have into the GMAT Pill table-top framework.

Once you visualize it this way, you can see exactly what you’re missing, exactly what you’re looking for as an ideal answer choice.

Answer choices A, C, D and E all did not fit what we were expecting going into the answer choices. Rather than spend an additional 15 seconds per answer choice trying to comprehend

what it is saying, if we can simply recognize that it is not relevant WITHOUT reading the answer choice carefully, we can save a LOT of time. 15 seconds for 4 answer choices translates to an entire minute that is saved by using this strategy. Over ~13 CR type questions, you'll save a good 13-15 minutes on the exam by using this strategy.

Now, let's try another CR example that has a similar visualization diagram – but the answer is derived in a different way.

CR Example 2

A nightclub manager in Las Vegas noticed that his beer cooler at the bar was half empty by the end of the night while his energy drink cooler at the bar was 90% empty. As a result, the manager reasoned that he should increase the amount of energy drinks and decrease the amount of beer he ordered from the distributor.

Which of the following, if true, would most strengthen the manager's rationale for ordering more energy drinks and less beer?

- (A) The two coolers at the bar in question are the only place in the nightclub where the energy drinks and beer are stored.
- (B) Nightclubbers tend to want to party all night and will order more energy drink vodkas than beers to keep up the energy for partying the whole night.
- (C) During that week, a special "New Year's Special" sale was in effect for the beer.
- (D) On the subsequent day, the remaining 10% of energy drinks all sold within the first hour after the nightclub reopened.
- (E) At the beginning of the day, the energy drink cooler was stocked with at least as many drinks as in the beer cooler.

Follow the GMAT Pill 3-step Approach.

Step 1: Identify the Conclusion

Typically, the conclusion is toward the end of the sentence. We spot a keyword here: “as a result” – this hints an outcome or result. The result is the manager’s new decision. That decision is that he “should increase the amount of energy drinks ... he ordered from the distributor each week”.

A nightclub manager in Las Vegas noticed that his beer cooler at the bar was half empty by the end of the night while his energy drink cooler at the bar was 90% empty. As a result, the manager reasoned that he should increase the amount of energy drinks and decrease the amount of beer he ordered from the distributor each week.

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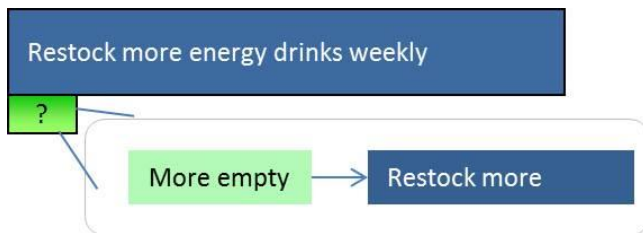
Notice the conclusion highlighted in yellow above. It follows after the keyword “as a result” and is what the manager thinks he should do.

Step 2: Visualize the Question

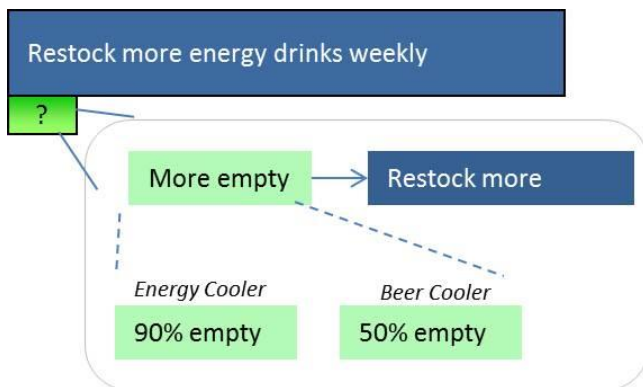
If you followed along with the course, you’ll also see that this is an observation → conclusion, similar to the prior example. The basis for the manager’s strategy is some rationale. That rationale is the basis. So what is that rationale/basis?

Well, that basis will come BEFORE the keyword “as a result”. So we should be looking at the prior sentence. That prior sentence is an observation; specifically, it’s an observation that the energy drink cooler is MORE empty than the beer cooler.

So let’s visualize that.



This is the argument repackaged under the table-top framework. Here, the conclusion is that the manager should “restock more energy drinks weekly”. The basis for that claim or conclusion is some observation that the energy drink cooler is MORE empty than the beer cooler. For this reason (this observation), the manager makes the conclusion that he should restock more energy drinks.



Step 3: Pre-think the Answer

Now comes the time to ask questions and challenge the basis. Is it necessarily the case that each time I see a cooler that is more empty than a beer cooler, that means the manager should restock more energy drinks each week?

Well, is it necessarily the case that based on 1 observation (that energy drink coolers are more empty) that we will see this same observation week after week? If we do see this to be the case week after week, it must be the case that consumers are consuming energy drink coolers at a consistently FASTER rate than they are consuming beer. And it must be the case that for that night, energy drinks were consumed at a faster rate than beer. Can we find an answer choice that helps us show that consumers are drinking energy drinks at a more frequent, faster pace than beer?

Our pre-thinking strategy: show that energy drinks are being consumed **more each day** (thus faster rate). Show that **a cooler being MORE empty necessarily means its drink was consumed more that day**.

Answer Choices:

- (A) The two coolers at the bar in question are the only place in the nightclub where the energy drinks and beer are stored.

Reconfirms information but does not strengthen.

Mentions these two coolers are the only ones – discounts outside factors changing the information provided. Argument is kept solid – but not clear that it strongly strengthens. No new information is presented that links ‘a cooler being more empty’ with ‘need to replenish more’. Answer choice (A) does not fit our pre-thinking strategy. It doesn’t show that energy drinks are being consumed at a faster rate.

The fact that these are the only 2 coolers we care about does not strengthen a connection between “observation” and “conclusion”. The only reason to restock more energy drinks is because they are being depleted more each day than beer is being depleted each day. But we still haven’t proven that energy drinks are being depleted at a faster rate – a simple observation that the energy drink cooler is more empty does not necessarily mean energy drinks are being consumed more frequently and at a faster rate.

- (B) On that day, a summer-long competition began that rewarded any night-clubber able to drink 5 energy drink vodkas in 5 minutes with \$100 in prize money.

Can encourage more energy drink consumption but unclear this is necessarily the case.

Mentions a competition that may encourage more energy drink consumption. But unclear whether the energy drink RATE for that one night was higher than that for beer since competition runs for more than 1 night. It’s possible that the competition started that day but there was no increase in energy drink consumption until several days later. In this case, it’s unclear that energy consumption is happening at a faster rate than beer.

(C) During that week, a special "New Year's Special" sale was in effect for the beer.

No. Mentions a special event – but wouldn't this make beer sell more instead? Does not fit our pre-thinking strategy of showing that more energy drinks are being consumed each day – specifically that day mentioned in the passage.

(D) On the subsequent day, the remaining 10% of energy drinks all sold within the first hour after the nightclub reopened.

Not relevant.

Mentions a lot of sales the next day for energy drinks – but not related to the "observation" – manager's reasoning at end of night. This one DOES connect to the conclusion (need to restock more) but does not connect to the observation (situation of coolers that particular first night).

We need an answer choice that can connect between both the "observation" AND the "conclusion".

What happens after that first night does not affect manager's thinking/rationale and so will be irrelevant to the argument.

If, on the other hand, this answer choice mentioned that the manager was expecting a large influx of energy drink consumers for the coming days/wks ahead, that could be reason to stock up more on energy drinks. But bypassing this expectation and saying what ended up happening the next day – that fact does not affect the manager's rationale which is his observation made THAT night, and any expectations he may have about the future.

(E) At the beginning of the day, the energy drink cooler was stocked with at least as many drinks as in the beer cooler.

Yes. Mentions energy drink started with same level or more of inventory – this means the rate of consumption was faster for energy drinks. If both coolers started at the same level but the energy drink cooler finished the end of the day with lower inventory, this must mean that energy drinks were consumed at a faster rate – at least for that one specific night.

Thus, for the manager, the reason why a 90% empty energy cooler signals a need to replenish more is because it indicates energy drinks were being sold at a FASTER rate and thus should be replenished in larger quantities. The big assumption here is that the coolers started at the same level (or higher for energy drinks).

Reflection on Strategy

How did our pre-think strategy here help us here? Well, it wasn't as clear and simple as in the prior example. We didn't eliminate 4 of the 5 answer choices right off the bat. Instead, we had to force ourselves to do a little bit more thinking for this question.

Knowing that we wanted to show a FASTER rate for energy drinks helped us stay focused. Answer choices (A) and (C) could be eliminated on that basis since they did not elaborate on *more* energy drinks.

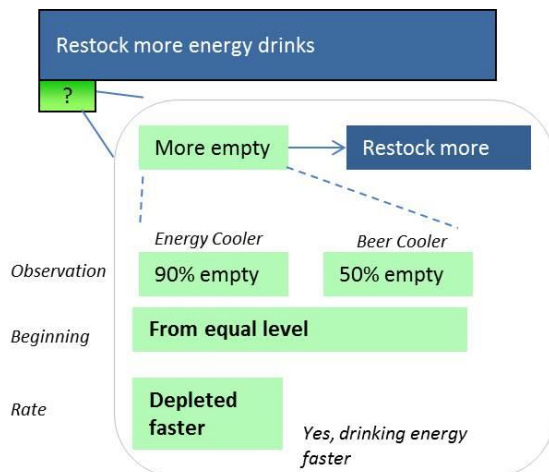
(B) and (D) DID elaborate on variables that could increase energy drink consumption, but for (B) the increase was not definitely clear and in (D) the increase occurred on a different day from the one mentioned in the rationale. As such, (D) only connected with the "conclusion" but did not connect with the "observation" which was made on that first night.

So in this example, thinking ONLY about 'showing increased energy consumption' got us down to 3 answer choices. From here, we had to dive deeper and make sure that the answer choice was connected to our observation (made that particular night) and was definitely linked to more energy drink consumption (not potentially).

These are small nuances to the visualization diagram you'll need to understand to take this question all the way to the final answer choice. Look for:

- 1) Faster energy consumption
- 2) Show need for restocking more energy
- 3) Show this outcome comes from the observation / rationale first presented

The final answer must relate to the "observation" and properly connect it to the "conclusion". Only (E) does that for us.



Summary

We went over two CR examples that utilized the basics of visualization diagrams within the Table-top Framework to help you pre-think an answer choice and keep you focused before you go into the answer choices.

Ultimately, by following these strategies, comprehension of the passage can become much clearer, and speed of elimination is improved exponentially.

Visualization of CR can get more complex for various types of CR questions. As such, GMAT Pill utilizes additional frameworks to help you take advantage of certain question types that come up over and over. These frameworks help pinpoint what parts of a visual diagram are less important for the purposes of answering the question and which parts are more important and can utilize quick strategies to yield the final answer.

Learn more about the GMAT Pill CR Framework and find out if it's the secret sauce you're missing for conquering critical reasoning.

This is just one tiny piece of what's inside GMAT Pill.

Others include:

- Visualization Techniques
- CR Frameworks for “Strengthens”
- CR Frameworks for “Weakens”
- CR Frameworks for “Evaluate”
- CR Frameworks for “Infer”
- CR Frameworks for “Bold-faced Structure”
- How to use the negation technique in the most efficient manner so you don't waste 2+ minutes negating each answer choice

For these high quality tips and thought process strategies, sign up for the full GMAT Pill course @ www.gmatpill.com

