Special Event:
GMAT Terminator by Dustin

The Theory and Practice of Automated Item Generation for GMAT Critical Reasoning Questions

What are the questions most asked by test-takers?

Common questions from test-takers

- "I’ve completed all the official practice questions."
- "I want to focus on my weak areas and practice variations of those questions."
- "I need to customize questions to fit my specific learning needs."

Can generative AI solve our problems?

“Please give me a GMAT Critical Reasoning Question”

Researchers have observed that people who regularly consume green tea have a significantly lower risk of developing cardiovascular diseases compared to those who do not. Some researchers suggest that green tea's high concentration of antioxidants is responsible for this health benefit. However, critics point out that people who consume green tea may also lead healthier lifestyles overall, such as maintaining better diets and engaging in more regular physical activity, which could contribute to their lower risk of cardiovascular diseases.

Which of the following, if true, would most strengthen the argument that antioxidants in green tea reduce the risk of cardiovascular diseases?

(A) Studies show that people who regularly consume green tea but do not engage in regular physical activity also experience a reduced risk of cardiovascular diseases.
(B) Laboratory experiments demonstrate that the antioxidants in green tea neutralize free radicals, which are associated with cardiovascular diseases.

Challenges in AI-Generated Questions

- **Surface vs. Substance:** Questions may mimic the format but lack alignment with the design logic of real test items.
- **Design Flaws:** Issues like multiple correct answers or no valid answer often occur.
- **Lack of Personalization:** Inability to generate customized questions targeting specific weaknesses of the test-taker.

To break through, you must understand AIG Theory First.

Strong v.s. Weak Theory

- **Strong Theory:**
  - Based on well-defined cognitive rules and theories.
  - Specifies the skills and knowledge needed for solving the questions.
- **Weak Theory:**
  - Adjusts surface-level features like numbers, words, or contexts to create new questions.

Strong v.s. Weak Theory

- If $2x+3=9$, what is the value of x?

- **Weak Theory:** If $3x-4=11$, what is the value of x?
- **Strong Theory:** If $3x-4=2x+5$, find x.

GMAC is also exploring weak-theory of item generation.

Weak-theory process applied by GMAC

- **Start with a Parent Item**
  - Example: 6 visitors are assigned to 2 buses. How many arrangements are possible?
- **Define Surface Features**
  - Adjust numerical ranges, text contexts, or visual elements.
  - Example: Replace "visitors" with "students" or “athletes." Change number ranges: X = 5–10, Y = 2–3.

Weak-theory process applied by GMAC

- **Generate Child Items**
  - Example: 7 students split between 2 cars. 5 athletes assigned to 2 elevators.
- **Validate and Adjust**
  - Ensure all generated items maintain similar difficulty and discrimination.
  - Check if harder items (e.g., larger X or Y) match intended difficulty levels. Refine distractors to prevent guessing patterns.

Let’s try and see if we can get questions better-aligned.

The question you went wrong

Arts advocate: Few universities require that students who are specializing in science and technology take many art courses. However, real progress in science and technology requires an element of creativity, which the arts foster. Thus, to help science and technology students succeed in their careers, universities should increase the number of art courses required for them.

Which of the following would, if true, most strengthen the argument above?

A. Universities required more art courses for science and technology students in the past.
B. Participation in art courses increases students' creative thinking in their science and technology courses.
C. More students who are interested in art would specialize in science and technology if the number of art courses required for those programs were increased.
D. Some of the most prominent scientists began their careers as artists.
E. Discussion of science and technology topics in art courses increases creative thinking among students in those courses.

you MUST generate a new GMAT Critical Reasoning (CR) question. It will create new stories and choices with logic similar to the provided GMAT CR question and choices.

This is what we get in seconds

A military strategist argues that few officer training programs require participants to engage in activities designed to develop creative thinking, such as strategic simulations or innovative problem-solving exercises. However, effective strategic planning in military operations often requires creativity. Therefore, to help officers excel in their roles, military training programs should include more creativity-focused activities.

Which of the following would, if true, most strengthen the strategist's argument?

A. Military training programs that incorporated creativity-focused activities in the past reported improvements in strategic decision-making by officers.
B. Participation in creativity-focused activities improves officers' ability to adapt to unpredictable battlefield scenarios.
C. More candidates would apply for officer training programs if these programs included creativity-focused activities.
D. Some of the most successful military operations in history were led by officers known for their creative thinking.
E. Creativity-focused activities encourage collaboration, which enhances strategic planning among officers in training.

If you are struggling with LONG & COMPLEX sentences …

Variant Qs focused on complex sentences

A military strategist argues that very few officer training programs, which are often designed to prepare individuals for the complex demands of military leadership, require participants to engage in activities specifically aimed at fostering creative thinking, such as participating in strategic simulations or undertaking innovative problem-solving exercises. However, the strategist contends that effective strategic planning, which is an essential component of successful military operations, frequently depends on a significant degree of creativity. Therefore, the strategist concludes that in order to ensure that officers are adequately prepared to excel in their leadership roles, military training programs should include a greater number of activities that are explicitly designed to promote and develop creativity.

Which of the following would, if true, most strengthen the strategist's argument?

A. Military training programs that, in the past, incorporated creativity-focused activities, such as strategic simulations, into their curriculum, reported significant improvements in the ability of officers to make effective and strategic decisions.
B. Participation in creativity-focused activities, such as exercises involving adaptive thinking or innovative planning, has been shown to significantly improve officers' ability to respond effectively to the unpredictable and dynamic scenarios they are likely to encounter on the battlefield.
C. A significantly greater number of candidates, many of whom possess strong leadership potential, would apply for officer training programs if these programs included more activities that were specifically designed to enhance creativity.
D. Historical records indicate that some of the most successful and innovative military operations ever conducted were led by officers who were widely recognized for their exceptional creative thinking and their ability to devise unorthodox strategies.
E. Creativity-focused activities, which are often collaborative in nature, encourage teamwork and discussion, which in turn serve to enhance the overall quality of strategic planning among officers undergoing training.

If you fear certain specialized contexts/domains…

Variant Qs focused on feminism / minorities

A feminist scholar posits that few organizations dedicated to empowering minority women provide platforms for creative expression, such as art workshops or writing collectives. However, the development of creative faculties is vital for fostering resilience and agency among marginalized groups. Therefore, to better equip minority women to confront systemic barriers, organizations should prioritize incorporating creative expression initiatives into their programs.

Which of the following would, if true, most strengthen the scholar's argument?

A. Organizations that previously implemented creative expression initiatives observed increased self-advocacy and confidence among minority women participants.
B. Participation in creative workshops enhances the ability of minority women to articulate their experiences in advocacy and policy-making spaces.
C. More minority women would engage with empowerment programs if these programs offered creative outlets as part of their core activities.
D. Some of the most impactful leaders in feminist movements began their advocacy through artistic or creative endeavors.
E. Creative expression initiatives foster a sense of solidarity and shared purpose, which strengthens the collective resilience of minority women in empowerment programs.

Let’s read this question

‘Child Item’ generated…

During the initial stages of the digital revolution, personal computers were considerably more expensive and less user-friendly than typewriters, which were the prevalent technology for text processing. Nonetheless, despite their cost and complexity, personal computers began to appear in homes and offices in substantial numbers before significant improvements in user interface and affordability. Moreover, their adoption occurred even in regions where typewriters were widely available and perfectly suited to the user’s needs.

Which of the following, if true, most helps to explain the proliferation of personal computers during the early stages of the digital revolution?

(A) In many regions, there were still more typewriters in use than personal computers during the initial stages of the digital revolution.
(B) Personal computers, unlike typewriters, required electricity, which sometimes had to be supplied by costly infrastructure changes.
(C) Converting from typewriters to personal computers involved a steep learning curve and significant adjustment in handling documents.
(D) During the early digital revolution, many tasks performed using computers, such as complex data analysis, could not be accomplished with typewriters.
(E) The number of places where typewriters could be effectively used was insufficient to meet all of the demands for document processing at the time.

from this ‘parent item’ in Official Verbal Review

During the earliest period of industrialization in Britain, steam engines were more expensive to build and operate than either windmills or water mills, the other practicable sources of power for factories. Yet despite their significant cost disadvantage, steam-powered factories were built in large numbers well before technical improvements brought their cost down. Furthermore, they were built even in regions where geographical conditions permitted the construction of wind- and water-powered factories close to major markets.

Which of the following, if true, most helps to explain the proliferation of steam-powered factories during the earliest period of industrialization in Britain?

(A) In many areas of Britain, there were fewer steam-powered factories than wind- or water-powered factories in the earliest period of industrialization.
(B) Unlike wind- or water-powered factories, steam-powered factories were fueled with coal, which sometimes had to be transported significant distances from the mine to the site of the factory.
(C) It was both difficult and expensive to convert a factory from wind power or water power to steam power.
(D) In the early period of industrialization, many goods sold in towns and cities could not be mass-produced in factories.
(E) In Britain, the number of sites where a wind- or water-powered factory could be built was insufficient to provide for all of the demand for factory-produced goods at the time.

Never worry about running out of Qs again.

The GMAT Terminator enables the creation of extensive, targeted, and customized question sets to help test-takers strengthen their skills effectively.

GMAT Terminator use Factorial Design to diagnose students' real weaknesses.

Factorial Design

- Determine whether GMAT CR errors are caused by logical reasoning difficulty or reading comprehension difficulty.

- Scenario 1: Keep logical difficulty, but lower reading difficulty.
- Scenario 2: Lower logical difficulty, but keep reading difficulty.

- Analyze which factor (logic or reading) has a stronger influence.

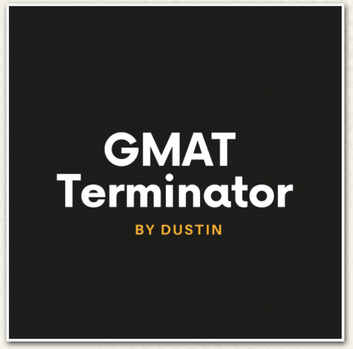
Gift for attendees: instant-use GPT prompts!

Prompts for your takeaway!

- Generate a new GMAT Critical Reasoning (CR) question. It will create new stories and choices with logic similar to the provided GMAT CR question and choices.

- Rewrite this question to focus on [domain] context.

- make every sentence longer and more complex without adding, deducing or distorting its original meaning.



Remember:

By ensuring your AI-generated questions are properly aligned with official GMAT standards, you can achieve highly effective and personalized training outcomes.

See you at:

GMATTerminator.site

For Quizzes, Assignments, and Discussions!