

# **Special Event: GMAT Terminator by Dustin**

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*Ways to Tackle*

*Critical Reasoning “Assumption” Questions*

# Rundown

- What is “Assumption”?
- “Necessary” vs. “Sufficient” assumption
- What is “Logical Gap” and how to evaluate it?



# What is “Assumption”?

(機器人可以發現跌倒的老人)

hypothesis (假說)

(機器人可以即時抬起來)

(抬起來後能夠做適當的處置)

證據：機器人可以把人抬起來

老人跌倒時機器人可以抬起來

結論：機器人可以「拯救」老人

- An assumption is an idea that is taken for granted without proof.
- Arguments may contain explicit assumptions or implicit assumptions (unstated but necessary). intermediate conclusion
- Example: Xiao Ming did well on his exam, so he must have studied.
- Implicit assumption: "If someone does well on an exam, they must have studied."
- But this is not necessarily true—someone could do well due to luck. If this assumption is false, the argument falls apart.



# Necessary Assumption

(預防削弱)

- A necessary assumption is something that must be true for the argument to work. If the assumption is false, the argument cannot hold up.
- Example: Xiao Hua's flight arrives at 5:00 PM, so he should reach here by 6:30 PM, and we will have dinner at 7:00 PM.
- Necessary assumptions:
  - The flight will not be significantly delayed (if it arrives at 8:00 PM, dinner at 7:00 PM is impossible). 不要迷路、不要塞車、不要意外
  - Xiao Hua will successfully board the flight (if he misses the flight, the timeline collapses). 班機不要delay
  - 不要沒登機



# Sufficient Assumption

- A sufficient assumption is one that, if true, guarantees the argument's conclusion.
- Example: Studying poetry has **no value** because poetry has no practical use.
- Sufficient assumption: "If something has **no practical use**, studying **it has no value**."



# Find “Logical Gap”

抓漏洞：若要帶入，建議帶入反對者

- What suddenly appears in the **conclusion**?
- Is that equivalent to factor(s) in premise?
- **"Even if... does it necessarily mean...?"**
  - Test if the reasoning is too rigid
  - Even if the premise is true, does the conclusion necessarily follow?
- **"Does... always mean...?"**:
  - Test if the reasoning overgeneralizes
  - Does this condition always guarantee the conclusion?

誰說（理由提到的概念）...就一定（新概念）？

難道....就一定會嗎？

# Check Choices

- Cross out all that are not related to the logical gap
- For the remaining choices:
  - Beware of the “scope”
  - Verify them by “Negation”

萬一：這個選項不成立，結論是否會不成立？



# Quiz #1

When a person is under intense psychological stress, his or her cardiovascular response is the same as it is during vigorous physical exercise. Psychological stress, then, must be **beneficial for the heart** as is vigorous physical exercise.

The argument above relies on which of **the following assumptions?**

- (A) Exercise is an effective means of relieving psychological stress.
- (B) The body's short-term cardiovascular response to any activity indicates that activity's long-term effect on the body.
- (C) Cardiovascular response during an activity is an adequate measure of how beneficial the activity is for the heart.
- (D) Psychological stress can have a positive effect on the body.
- (E) Vigorous exercise is the most reliable method of maintaining a healthy heart.



# Quiz #1

GAP: 心血管的反應→對心臟有益嗎？

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- ~~(D) Psychological stress can have **a positive effect on the body.**~~
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# Quiz #2

**Logical Gap: 每個工人產出的量減半 (\* 工人數量) -> 總量減半**

In response to mounting public concern, an airplane manufacturer implemented a program with the well-publicized goal of reducing by half the total yearly amount of hazardous waste generated by its passenger-jet division. When the program began in 1994, the division's hazardous waste output was 90 pounds per production worker; last year it was 40 pounds per production worker. Clearly, therefore, charges that the manufacturer's program has not met its goal are false.

**結論：他們有成功把總廢棄物減半**

Which of the following is an assumption on which the argument depends?

- (A) The amount of nonhazardous waste generated each year by the passenger-jet division has not increased significantly since 1994.
- (B) At least as many passenger jets were produced by the division last year as had been produced in 1994.
- (C) Since 1994, other divisions in the company have achieved reductions in hazardous waste output that are at least equal to that achieved in the passenger-jet division.
- (D) The average number of weekly hours per production worker in the passenger-jet division was not significantly greater last year than it was in 1994.
- (E) The number of production workers assigned to the passenger-jet division was not significantly less in 1994 than it was last year.



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- (D) The average number of **weekly hours per production worker** in the passenger-jet division was not significantly greater last year than it was in 1994.
- (E) **The number of production workers** assigned to the passenger-jet division was not significantly less **in 1994** than it was last year. **工人數量**



## Quiz #3

Market researchers recently reported that ninety percent of the people interviewed objected to a particular detergent's advertisement because of their portrayal of women. Yet this detergent is purchased by twenty percent of consumers. So its advertisements must be considered to be unobjectionable to at least twenty percent of consumers.

The conclusion of the argument above depends on which of the following assumption?

- (A) People who object to a product's advertisements may still buy that product.
- (B) The people who buy this detergent are familiar with its advertisement.
- (C) Most of the people who do not buy this detergent consider this advertisements to be objectionable.
- (D) Most people wash their own clothes, so they have to buy some brand of detergent.
- (E) Most of the people in the market research study were women.



# Quiz #3

GAP: 購買了的人->對廣告的態度不反對

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- (B) The people who buy this detergent are familiar with its advertisement. 萬一買的人不怎麼看過廣告
- (C) Most of the people who do not buy this detergent consider this advertisements to be objectionable.
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# Quiz #4

When storing Renaissance oil paintings, museums conform to standards that call for careful control of the surrounding temperature and humidity, with variations confined within narrow margins. Maintaining this environment is very costly, and recent research shows that even old oil paint is unaffected by wide fluctuations in temperature and humidity. Therefore, museums could relax their standards and save money without endangering their Renaissance oil paintings.

Which of the following is an assumption on which the argument depends?

- (A) Renaissance paintings were created in conditions involving far greater fluctuations in temperature and humidity than those permitted by current standards.
- (B) Under the current standards that museums use when storing Renaissance oil paintings, those paintings do not deteriorate at all.
- (C) Museum collections typically do not contain items that are more likely to be vulnerable to fluctuations in temperature and humidity than Renaissance oil paintings.
- (D) None of the materials in Renaissance oil paintings other than the paint are vulnerable enough to relatively wide fluctuations in temperature and humidity to cause damage to the paintings.
- (E) Most Renaissance oil paintings are stored in museums located in regions near the regions where the paintings were created.



# Quiz #4

GAP: 顏料->整幅畫

When storing Renaissance oil paintings, museums conform to standards that call for careful control of the surrounding temperature and humidity, with variations confined within narrow margins. Maintaining **this environment is very costly**, and recent research shows that **even old oil paint is unaffected by wide fluctuations in temperature and humidity**. Therefore, museums could **relax their standards and save money without endangering their Renaissance oil paintings**.

老顏料不會受溫濕度影響

不用控制溫濕度也能保存文藝復興油畫

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除顏料外，沒有其他的成分會受溫濕度而破壞

->萬一，有其他成分會受溫濕度破壞



## Quiz #5 (Role-based Thinking)

Airport official: Local residents have been complaining that night flights into Plainsville airport disturb their sleep and should be sharply reduced in number. **This complaint is completely unreasonable**—there have been night flights coming into the airport from the very beginning, twenty years ago, and these residents should have taken that fact into account when buying their homes.

Which of the following is an assumption on which the airport argument depends?

- (A) There are fewer night flights now than there were originally
- (B) The residents who are complaining have been in their current homes fewer than twenty years
- (C) The residents who are complaining are ignoring the benefits they gain from the presence of the airport
- (D) The economic success of the airport depends entirely on the existence of the night flights
- (E) People buying houses in Plainsville all avoid buying houses near the airport if they can



## Quiz #5 (Role-based Thinking)

夜班飛機都飛了20年了->早就考慮到了->不該抱怨晚上有航班

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早就有了

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## Quiz #5 (Role-based Thinking)

現在的夜間航班比以前少->（否定）：現在的夜間航班沒有比以前少（現在的狀況跟以前一樣）

->你買房子的時候就更應該要考慮到->結論成立

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抱怨的都是不滿20年的->（否定） 抱怨的都是20年以上的住戶->買房子的時候不一定會考慮->削弱結論



## Quiz #6 (advance)

Previous studies have indicated that eating chocolate increases the likelihood of getting heart disease. However, a new, more reliable study has indicated that eating chocolate **does not increase the likelihood of getting heart disease**. When the results of the new study become known, **consumption of chocolate will undoubtedly increase**.

Which of the following is an assumption on which the conclusion above is based?

- (A) Most people who eat a great deal of chocolate will not get heart disease.
- (B) Although they believe that eating chocolate increases the likelihood of getting heart disease, some people still eat as much chocolate as they want.
- (C) People who have heard that eating chocolate increases the likelihood of getting heart disease do not believe it.
- (D) There are people who currently eat as much chocolate as they want because they have not heard that eating chocolate increases the likelihood of getting heart disease.
- (E) There are people who currently limit their consumption of chocolate only because they believe that eating chocolate increases the likelihood of getting heart disease.



# Quiz #6 (advance)

GAP: 巧克力不導致心臟病->多買巧克力

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選項的主角不一樣的時候

(否定) 原本不吃的人不是只是因為怕心臟病  
->有別的理由不吃->研究出來後還是不吃  
->消費量不一定上升 (否定結論)



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## Quiz #7 (scope)

Early in the twentieth century, Lake Konfa became very polluted. Recently fish populations have recovered as release of industrial pollutants has declined and the lake waters have become cleaner. Fears are now being voiced that the planned construction of an oil pipeline across the lake's bottom might revive pollution and cause the fish population to decline again. However, a technology for preventing leaks is being installed. Therefore, provided this technology is effective, those fears are groundless.

The argument depends on assuming which of the following?

- (A) Apart from development related to the pipeline, there will be no new industrial development around the lake that will create renewed pollution in its waters.
- (B) There is no reason to believe that the leak-preventing technology would be ineffective when installed in the pipeline in Lake Konfa.
- (C) The bottom of the lake does not contain toxic remnants of earlier pollution that will be stirred into water by pipeline construction.
- (D) Damage to the lake's fish populations would be the only harm that a leak of oil from the pipeline would cause.
- (E) The species of fish that are present in Lake Konfa now are the same as those that were in the lake before it was affected by pollution.



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**GAP: 防止漏油->不用擔心油管工程會讓污染復甦**

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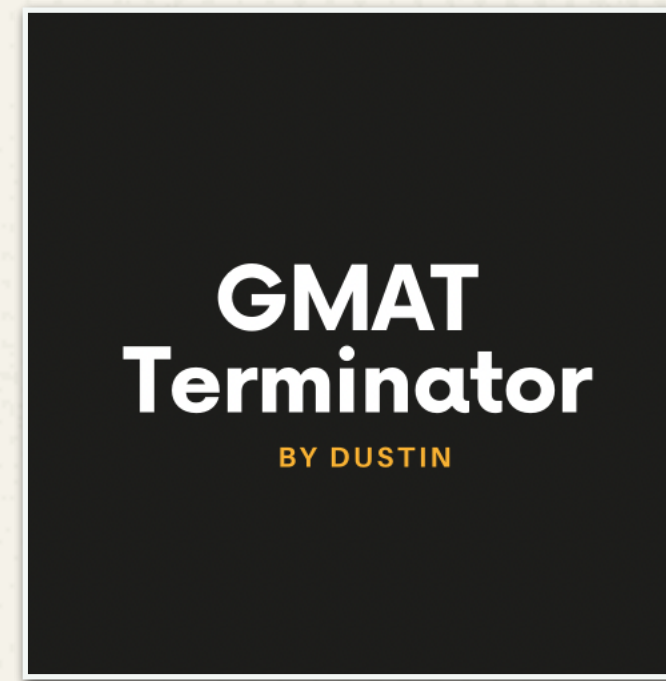
油管的建設->重新導致污染

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**Remember:**

*Notify the logical gaps before jumping into choices.*

See you at:

[GMATTerminator.site](http://GMATTerminator.site)

For Quizzes, Assignments, and Discussions!