

1991 GRE 分析新趨勢 (含邏輯)

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本書特色

- 最新：搜羅 1990、1991 真正 GRE 試題編輯而成。
 - 精準：分析邏輯說理脈絡分明，解題乾淨俐落。
 - 豐富：資料豐富；題型完備；內容由淺入深，為 GRE 分析經典之作。
- (附 GTS91 全年 GRE 分析試題與詳解)



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哈佛留學叢書



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GRE REAL TEST

1991 GRE 真正題庫



周天行・林鳴遠・王雲

聯合題解



哈佛留學叢書

GRE REAL TEST

1991 GRE 真正題庫 秘訣

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登記證／局版臺業字第四〇四八號

印刷所／松霖彩色印刷事業有限公司

地 址／台北縣中和市連城路222巷2弄3號

第二版第一印／民國80年1月

定價新台幣270元

版權所有・翻印必究

(本書如有破損、缺頁、倒裝，敬請寄回本社更換)

而言，中國同學彼此之差異並不大。所以，如何在激烈的競爭中，將 GRE 總分提高，分析部份便處於關鍵的地位。

如何提高分析分數呢？須知，要在 30 分鐘內「做完」25 題，對於大多數的同學而言，幾乎是不可能。這就是為何每次測驗完畢，同學們的分析分數鮮有超過 700 分以上的原因。因此，我們在接觸 GRE 分析題目時，先要的心理準備便是 **1. 不要一開始就期望做對百分之百的題目**。其次，**2 儘量利用最有限的時間增強閱讀能力**：閱讀題目的速度加快對解題的正確性而言，絕對有正面的幫助。**3. 對於題數較多的題組必定要先做**：一般而言，題數多的題組必定含有相當數量的「送分題」這裏所謂的送分題，指的是：只要你能將原題組的條件做個大略的簡圖，便可直接選出答案的題目，面對這種題組不但不可放棄，而且最好優先作答。**4. 答題時，先依據本書所作的「基本題型分類」來判定題目的型態，以迅速立思考方向**。分析推理的題目雖然千變萬化然而，其基本的型態仍是固定的。本書依照排列問題，組隊問題，時間安排問題等，將各種要題型作系統而且連貫的介紹。若能熟悉本書各類題型，在分秒必爭的考場上，必能達到筆者「見題→作圖→分析→迅速答題」的要求。

在細部的解題技巧方面：

- 1. 要注意題目中的關鍵字。(Key Word)：**如 must, could, least, most, always, sometimes, never, if, only if 等。
- 2 輯規則的運用：**一般而言，邏輯規則往往隱含在題目的敘述之中，而且不大可能說得太直接，因此我

們務必將所有的情形都考慮進去。

<例如> “John don't want to go with Mary” 這句話可能會由題目中的兩句話 “if Mary, then not John” 和 “if John, then not Mary” 組合而成。這時，邏輯概念稍弱的同學，可能會作出兩種圖形： $M \rightarrow J$ ， $J \rightarrow M$ 。實際上，只須作簡單的記號： $J \times M$ 即可。

<例如> “A is not B's friend and A is not C's friend” 由這敘述只能得知「A不是B，C的朋友」，而無法推得「B是C的朋友」

3. 串連所給的資料

這個工作包括 2 個步驟：

(1) 分解：即是將所得資料拆成單項的資料，以便於使用或作圖。

<例如> Jack will not work with John or Jane.

這句話含有兩項不同的資料：① Jack will not work with John ② Jack will not work with Jane. 這兩項資料應分別加以考慮（可作圖如右： $J \times \begin{matrix} \text{Jane} \\ \times \text{Jane} \end{matrix}$ ）

(2) 連貫：將相同性質的資料分類合併。

<例如> A is cheaper than B — ①

B is cheaper than C — ②

B is heavier than D — ③

C is cheaper than D — ④

若以價格為準，則不考慮條件③，而由①，②，

④推知： $A > B > C > D$

4. 每題作答時，千萬不要受到上一題的影響

題組式的題目，本身含有很多小題，而往往每小題都有各自獨立的條件。這時，回答每一題時，千萬不要受到上一題的影響。

5. 若一時看不懂題目的意義，不妨先看所問的問題，

反推出題目的涵義：運用這種方法，往往可收「絕處逢生」之效。

6. 答題須掌握「先易後難」的原則：須知，GRE 試題

，每題之配分都相同，因此，沒有必要為任何一道特別難的題目花費過多的時間，採取「做對一題，便得一題分數」的「穩紮穩打」的策略，才是上上策。

編者序

自筆者進入哈佛留學中心執教迄今。眼見許多同學整日埋首於 GRE 相關書籍之中，分析成績却未見起色。歸根究底，大多數同學準備的方式都是「只見樹不見林」，往往只針對各別零星的題目，逢題解題，而沒有對整個的題型做歸納與分析。如此分數自然只停在某個階段。（多數在 450 ~ 550 上下），難以突破。

本書的編寫方式，便是針對同學在這方面的盲點而設計的。透過分型分類的介紹方式，同學很容易發現：原來 GRE 的分析與邏輯的考型，就是固定的那麼幾個。針對題型，由淺入深做個透徹的了解。相信同學若能細心地“做”（而非“讀”）完本書，收穫必然豐盈。本書的乃是筆者授課時的講義整理而得。因仔細研讀此書，而分析部份突破 670 者比比皆是，超越 700 分者亦不乏其人，這是我執教該課程，最感欣慰的一件事。

本書的編寫過程極為辛苦，從籌劃，資料整理，到執筆完稿，莫不投入極大的時間與心力。所求無他，只希望能夠因本書使同學得以順利進入理想中之校系。

在此特別感謝在公務繁忙之餘仍時常給我鼓勵的父親及任勞任怨，勤儉持家的母親，提供我無比精神力量的李默先修女。尤其是不時予以指點編寫方針的哈佛周主任，以及助我完稿、審核的編輯翠萍、美燕及哈佛同仁。沒有他們，本書無法順利呈現在讀者眼前。

林鳴遠

1991 年 6 月識於台北哈佛



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■ 第 43 組試題



第43組試題

1

SECTION I

Time—30 minutes

30 Questions

Numbers:

All numbers used are real numbers.

Figures:

Position of points, angles, regions, etc. can be assumed to be in the order shown; and angle measures can be assumed to be positive.

Lines shown as straight can be assumed to be straight.

Figures can be assumed to lie in a plane unless otherwise indicated.

Figures that accompany questions are intended to provide information useful in answering the questions. However, unless a note states that a figure is drawn to scale, you should solve these problems NOT by estimating sizes by sight or by measurement, but by using your knowledge of mathematics (see Example 2 below).

Directions: Each of the Questions 1-15 consists of two quantities, one in Column A and one in Column B. You are to compare the two quantities and choose

- A if the quantity in Column A is greater;
- B if the quantity in Column B is greater;
- C if the two quantities are equal;
- D if the relationship cannot be determined from the information given.

Note:

Since there are only four choices, NEVER MARK (E).

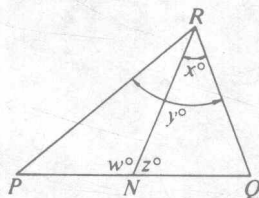
Common

Information:

In a question, information concerning one or both of the quantities to be compared is centered above the two columns. A symbol that appears in both columns represents the same thing in Column A as it does in Column B.

	Column A	Column B	Sample Answers
Example 1:	2×6	$2 + 6$	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E

Examples 2-4 refer to $\triangle PQR$.



Example 2:

PN

NQ

☐ A ☐ B ☐ C ☒ D ☐ E

(since equal measures cannot be assumed, even though PN and NQ appear equal)

Example 3:

x

y

☐ A ☒ B ☐ C ☐ D ☐ E

(since N is between P and Q)

Example 4:

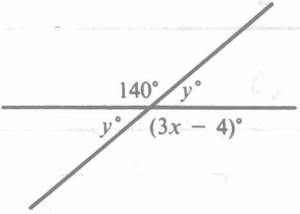
$w + z$

180

☐ A ☐ B ☒ C ☐ D ☐ E

(since PQ is a straight line)

- A if the quantity in Column A is greater;
 B if the quantity in Column B is greater;
 C if the two quantities are equal;
 D if the relationship cannot be determined from the information given.

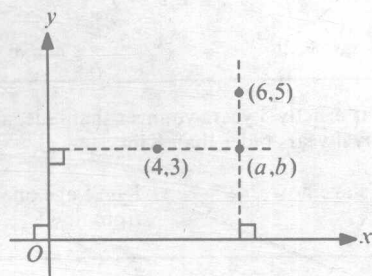
Column A	Column B	Column A	Column B
	$xy < 0$		$s + t = 6$
1. x	y	6. $s + 2t$	$2s + t$
2. $(0.3)^{20}$	$(0.03)^{50}$	John is exactly 3 years younger than Sue, and Sue is exactly 4 years older than Kim.	
	$x > 3$	7. John's age now	Kim's age one year from now
3. $\frac{1}{x+3}$	$\frac{1}{x-2}$		
The circumference of circle P is greater than the circumference of circle Q .		8. x	y
4. The radius of circle P	The diameter of circle Q	$24x = 18y$	
In Town X the population increased from 20,000 in 1960 to 30,000 in 1980. In Town X , the population under age ten in 1960 was 2,500, and in 1980 the population under age ten was 10 percent of the population.		9. $4x$	$3y$
5. The increase in the population under age ten in Town X from 1960 to 1980	600		

GO ON TO THE NEXT PAGE.

- A if the quantity in Column A is greater;
 B if the quantity in Column B is greater;
 C if the two quantities are equal;
 D if the relationship cannot be determined from the information given.

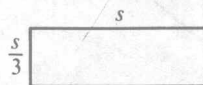
Column A

Column B



10. a b

11. $\sqrt{3}$ $\frac{3}{2}$



The perimeter of the rectangle is 16.

12. The area of the rectangular region 12

Column A

Column B

The average (arithmetic mean) of 10 numbers is 52. When one of the numbers is discarded, the average of the remaining numbers becomes 53.

13. The discarded number 51

Circles R , S , and T are in the same plane, have a common center, and have radii r , s , and $r + s$, respectively, where $0 < r < s$.

14. The area of the region whose boundary consists of circles R and T πs^2

n is an even integer.

15. The number of different prime factors of n The number of different prime factors of $2n$

GO ON TO THE NEXT PAGE.

Directions: Each of the Questions 16-30 has five answer choices. For each of these questions, select the best of the answer choices given.

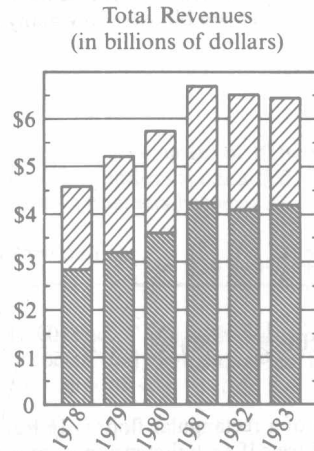
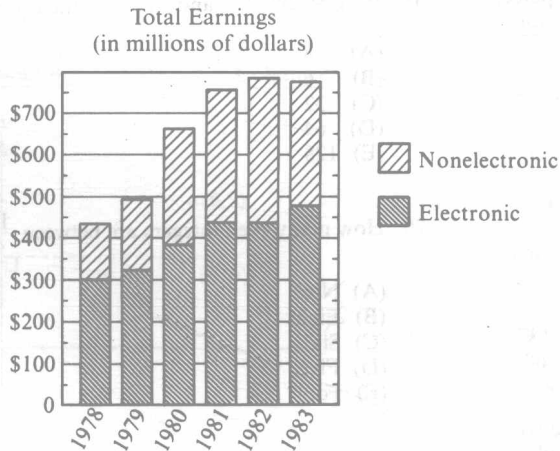
16. A dresser drawer contains 15 garments. If 40 percent of those garments are blouses, how many are not blouses?
- (A) 6
(B) 8
(C) 9
(D) 10
(E) 12
17. $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} =$
- (A) $\frac{32}{25}$ (B) $\frac{117}{60}$ (C) $\frac{52}{25}$ (D) $\frac{109}{50}$ (E) $\frac{137}{60}$
18. The length of a rectangular floor is 16 feet and its width is 12 feet. If each dimension were reduced by s feet to make the ratio of length to width 3 to 2, what would be the value of s ?
- (A) 0
(B) 2
(C) 4
(D) 6
(E) 8
19. If $y = 2^{(x-1)^2}$ and $x = 3$, then $y =$
- (A) 8
(B) 16
(C) 32
(D) 64
(E) 128
20. How many even integers are between $\frac{17}{4}$ and $\frac{47}{2}$?
- (A) Nine
(B) Eight
(C) Six
(D) Five
(E) Four

GO ON TO THE NEXT PAGE.

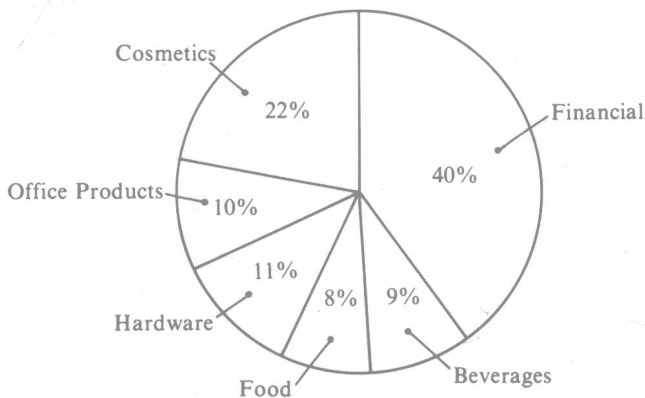
Questions 21-25 refer to the following graphs.

DISTRIBUTION OF EARNINGS AND REVENUES FOR COMPANY X, 1978-1983 ELECTRONIC AND NONELECTRONIC OPERATIONS

(1 billion = 1,000,000,000)



Distribution of Earnings from Nonelectronic Operations, 1983 (in millions of dollars)



Note: Drawn to scale.

21. Total earnings from operations in 1982 were approximately how much more than total earnings from operations in 1978 ?

- (A) \$100 million
- (B) \$125 million
- (C) \$180 million
- (D) \$340 million
- (E) \$475 million

22. For the year in which earnings from electronic operations first exceeded \$400 million, total revenues were approximately

- (A) \$2.8 billion
- (B) \$4.5 billion
- (C) \$5.2 billion
- (D) \$5.8 billion
- (E) \$6.7 billion

23. In 1979, total earnings for Company X were approximately what percent of total revenues?

- (A) 1%
- (B) 5%
- (C) 10%
- (D) 15%
- (E) 60%

24. For the two years in which earnings from electronic operations were most nearly equal, the combined earnings from nonelectronic operations were most nearly

- (A) \$340 million
- (B) \$520 million
- (C) \$670 million
- (D) \$780 million
- (E) \$1,520 million

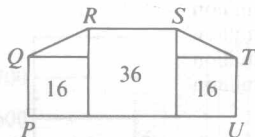
25. In 1983 earnings from financial nonelectronic operations accounted for approximately how many millions of dollars?

- (A) 312
- (B) 300
- (C) 180
- (D) 140
- (E) 120

GO ON TO THE NEXT PAGE.

26. If k is an integer and $5^k < 20,000$, what is the greatest possible value of k ?

(A) 6 (B) 7 (C) 8 (D) 9 (E) 10



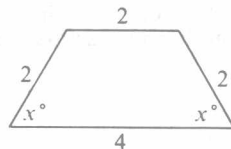
27. In the figure above, region $PQRTU$ consists of three square regions and two triangular regions. If the square regions have areas 16, 36, and 16, what is the perimeter of $PQRTU$?

(A) $22 + 4\sqrt{5}$
 (B) $28 + 2\sqrt{5}$
 (C) $28 + 4\sqrt{5}$
 (D) $34 + 2\sqrt{5}$
 (E) $34 + 4\sqrt{5}$

28. If x is a nonzero integer, which of the following must be a negative integer?

I. $-(3x^2 + 4)$
 II. $-(-x)$
 III. $(-x)^3$

(A) None
 (B) I only
 (C) III only
 (D) I and III only
 (E) I, II, and III



29. What is the area of the quadrilateral shown above?

(A) $2\sqrt{3}$
 (B) $3\sqrt{3}$
 (C) $6\sqrt{3}$
 (D) 6
 (E) 8

30. If the length of each of the sides of three square garden plots is increased by 50 percent, by what percent is the sum of the areas of the three plots increased?

(A) 375%
 (B) 200%
 (C) 150%
 (D) 125%
 (E) 50%

STOP

IF YOU FINISH BEFORE TIME IS CALLED, YOU MAY CHECK YOUR WORK ON THIS SECTION ONLY.
 DO NOT TURN TO ANY OTHER SECTION IN THE TEST.

2

SECTION 2

Time—30 minutes

25 Questions

Directions: Each question or group of questions is based on a passage or set of conditions. In answering some of the questions, it may be useful to draw a rough diagram. For each question, select the best answer choice given.

Questions 1-5

An old painting portrays a seated jury of exactly six persons arranged in two parallel rows of three persons each. Each person in the back row is directly behind one person in the front row. The positions of the six jurors, numbered 1 through 6 by historians, appear in the painting as follows:

Back row, left to right—4 5 6

Front row, left to right—1 2 3

Inscribed on the back of the paintings are the names of exactly five persons—Urquart, Vere, Winters, Young, and Zeno. The historians know that each of these five persons is a juror portrayed in the painting. The name of the sixth person in the painting is unknown. The only additional information that historians have comes from letters of the time, which indicate the following:

Zeno is in position 5.

Young is directly behind Winters.

Urquart is not in the same row as Vere.

1. If the jury's front row is made up, from left to right, of Urquart, the juror whose name is unknown, and Winters, which of the following must be true?

(A) Vere is in position 4.
(B) Vere is in position 5.
(C) Vere is in position 6.
(D) Young is in position 4.
(E) Young is in position 5.

2. If one of the two rows is made up, from left to right, of Winters, the juror whose name is unknown, and Vere, then Urquart must be in position

(A) 1
(B) 2
(C) 3
(D) 4
(E) 6

3. If Urquart is directly in front of Zeno, which of the following must be true?

(A) Vere is in position 4.
(B) Vere is directly behind the juror whose name is unknown.
(C) The juror whose name is unknown is in position 1.
(D) The juror whose name is unknown is in position 6.
(E) The juror whose name is unknown is directly behind Vere.

4. Which of the following jurors must be in the same row as Zeno?

(A) Urquart
(B) The juror whose name is unknown
(C) Vere
(D) Winters
(E) Young

5. Which of the following, if it could be established, would allow historians to determine the positions of all other jurors portrayed in the painting?

(A) The juror whose name is unknown is in position 1.
(B) Vere is in position 2.
(C) Vere is in position 3.
(D) Winters is in position 1.
(E) Young is in position 6.

GO ON TO THE NEXT PAGE.