GRE

考 满 分 G R E

数 学 一 对 一

最新机经 600 题

考 前 巩 固 练 习

最新最全数学机经题

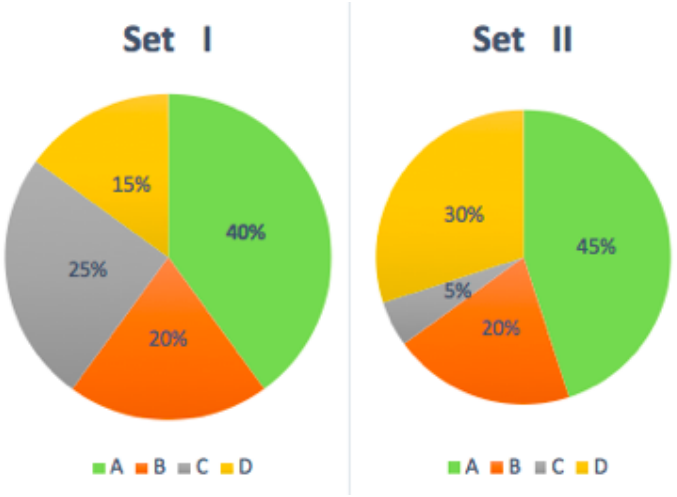
全面体现最新&最热门考点

2.1 用图形描述数据专题

[专项练习]

测试用时	正确率	错题编号
/min	/5	

Questions 1 to 3 are based on the following graph.



The total number of Set I is 7,000 and the total number of Set II is 13,500.

1. What is the closest value of ratio of the number of A in set I to the number of A in set II?

Give your answer as ***fraction***.

（来源： GRE 数学最新最快最全机经 600 题（二）157：Easy）

2. If the number of B in set I is decreased by 350, what is the new percentage of B in Set I?

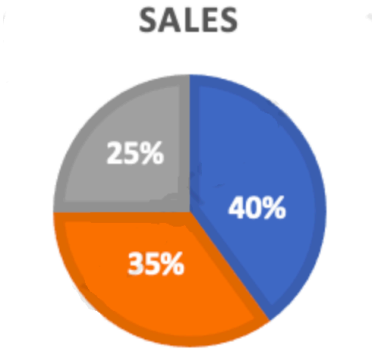
%

（来源： GRE 数学最新最快最全机经 600 题（二）158：Easy）

3. The number of C in set I is what percent greater than the number of C in set II?

%

（来源： GRE 数学最新最快最全机经 600 题（二）159：Easy）



Questions 4 to 5 is based on the following graph.

4. The number of sales covered by 40% region is what percent greater than the number of sales covered by 35% regions?

Give your answer to the closest ***tenth***.

（来源： GRE 数学最新最快最全机经 600 题（三）169：Easy）

5. What is the central angle of the region covered by 25%?

°

（来源： GRE 数学最新最快最全机经 600 题（三）170：Easy）

2.2 用数字描述数据专题

[专项练习]

测试用时	正确率	错题编号
/min	/45	

平均值

1. Set S contains 7 numbers: 10, 20, 30, x, 50, 60, 70

Quantity A: The mean of the 7 numbers

Quantity B: x

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）142：Easy）

2.

$a=\frac{x}{x+y+z}$, $b=\frac{y}{x+y+z}$, $c=\frac{z}{x+y+z}$

Quantity A: The average of a, b and c

Quantity B: 1/2

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）170：Easy）

3. $x=\frac{3}{5}y=\frac{2}{3}z \quad (x\neq 0)$

Quantity A: The average of x, y and z

Quantity B: x

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）127：Easy）

4.

Set R={x, y, z, 2.7, 3.8, 5.5}

Set S={x, y, z, -2.7, -3.8, -5.5}

The average of Set R is r, while the average of Set S is s. r-s must be the average of which of the following set of numbers?

A. x, y, z

B. 2.7, 3.8, 5.5

C. -2.7, -3.8, -5.5

D. –x, -y, -z

E. -2.7, -3.8, -5.5, 2.7, 3.8, 5.5

（来源： GRE 数学最新最快最全机经 600 题（一）150：Easy）

5. There are n positive integers. The sum of the numbers is greater than 50, while the arithmetic average of the numbers is 2.5. What is the least value of n?

（来源： GRE 数学最新最快最全机经 600 题（一）12：Easy）

6. List M includes 100 numbers, while List N includes 25 numbers. The average of M is 31, while the average of List M and N combined is 29. What is the average of List N alone?

（来源： GRE 数学最新最快最全机经 600 题（一）149：Easy）

7. In a certain sequence of 90, 105, x, 120 and 125, both the mean and the median are equal to x. What is the value of x?

（来源： GRE 数学最新最快最全机经 600 题（三）6：Easy）

8. For 5 different numbers, the average of the 3 largest number is 72 more than the average of the 3 smallest number. How much larger is the average of the 2 largest number than the average of the 2 smallest number?

（来源： GRE 数学最新最快最全机经 600 题（三）43：Medium）

9. In a number set of A and B, the probability that the number in Set A which are greater than 50 is equal to the probability that the number in Set B which are greater than 55.

Quantity A: The average of Set A

Quantity B: The average of Set B

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）50：Medium）

10. The average of 10 positive integers is 7.5

Quantity A: The probability of randomly selecting a number that is greater than 7

Quantity B: 0.5

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）152：Medium）

11. The average of a list containing 55 numbers is x. If a number k is removed from the list, the new average is x-1. What is the value of k in terms of x?

（来源： GRE 数学最新最快最全机经 600 题（三）58：Easy）

平均值应用题

12. The average weight of a pair of parents is 240 pounds more than the average weight of their 4 kids. If the average of the entire family is 140, what is the average weight of 4 kids?

（来源： GRE 数学最新最快最全机经 600 题（二）190：Medium）

13. The average weight of 7 fish is 25 pounds. Among them, the 4 heaviest weigh 117 pounds in total, the average of the 4 lightest weigh 20.5 pounds. What' s the median weight of the 7 fish?

 pounds

（来源： GRE 数学最新最快最全机经 600 题（二）60：Medium）

14. If a kid sits an exam for 10 times (the full score of the exam is 100), but only gets an average score of 75, then how many more times does he need to sit the exam and get a score of 100 each time, such that his average score will reach 90?

（来源： GRE 数学最新最快最全机经 600 题（一）2：Easy）

15. Each employee of a certain company is in either Department X or Department Y, and there are more than twice as many employees in Department X as in Department Y. The average (arithmetic mean) salary is $25,000 for the employees in Department X and is $ 35,000 for the employees in Department Y. Which of the following amounts could be the average salary for all of the employees in the company?

Indicate ***all*** such amounts.

A. $26,000

B. $28,000

C. $29,000

D. $30,000

E. $31,000

F. $32,000

G. $34,000

（来源： GRE 数学最新最快最全机经 600 题（三）91：Hard）

16. The sale price of a pen and a pencil is $2 and $1.5, respectively. Which of the following statement could determine the average sold price?

Indicate ***all*** such statements.

A. The total number of pens and pencils sold is 150

B. The number of sold pens is 50 greater than the number of sold pencils

C. The number of sold pens is twice as many as the number of sold pencils

（来源： GRE 数学最新最快最全机经 600 题（三）150：Medium）

中位数

17. x<y, and the median of x, y and 120 is 100

Quantity A: x

Quantity B: 90

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（一）64：Medium）

18. All the angles in a regular n-sided polygon and a (n+1)-sided regular polygon are included in a list

Quantity A: The median of the list of angles

Quantity B: 90°

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（一）73：Medium）

19. The median of 5 integers is 60, with each of the remaining 4 numbers between 50 and 70, inclusive. Which of the following could be the sum of the 5 integers?

A. 200

B. 230

C. 250

D. 290

E. 330

（来源： GRE 数学最新最快最全机经 600 题（三）151：Medium）

20. There are 15 numbers in List M, in which 8 numbers are greater than 50.4, and 8 numbers are less than 54.6.

Quantity A: The median of the numbers in List M

Quantity B: 52.5

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（一）157：Medium）

21. a<b<c<d

Quantity A: (a+b)/2

Quantity B: The median of four numbers

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）34：Medium）

极差

22. The range of a list is 18. If the smallest number is -3, what is the value of the greatest number?

（来源： GRE 数学最新最快最全机经 600 题（三）139：Easy）

23. The range of the first set is 10, if each of the number in the first set is doubled and then added by 3, what is the range of the new set?

（来源： GRE 数学最新最快最全机经 600 题（二）171：Medium）

24. 40<r<s<t<60

r, s and t are all integers. What is the range of all the possible values of r+s+t?

（来源： GRE 数学最新最快最全机经 600 题（一）20：Easy）

25. x and y are both integers

If $4 \leqslant x < 7 < y \leqslant 12$, then what' s the range of $(x-y)^2$?

（来源： GRE 数学最新最快最全机经 600 题（一）47：Medium）

26.

Set A={1, 2, 3, 4, 5}

Set B={6, 7, 8, 9, 10}

If a number is selected from each of the set, and then added together, then what' s the range of all the possible values of the sum?

（来源： GRE 数学最新最快最全机经 600 题（一）65：Easy）

27. A set contains all the integers from 53 to 63

Quantity A: The range when each number in the set is added by 5

Quantity B: The range when each number in the set is increased by 1.5%

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）119：Medium）

28. 25 integers are from 1 to 10, inclusive. The average of the 25 integers is 9. The sum of the remaining 24 integers except for the smallest value is 217. What is the range of the 25 integers?

（来源： GRE 数学最新最快最全机经 600 题（三）192：Hard）

29. In a class, the age of female students is from f to 44, and the age of male students is from 23 to m. Which of the following expression could be the range of all the students' age?

Indicate ***all*** such expressions.

A. m-f

B. 44-23

C. m-44

D. f-23

（来源： GRE 数学最新最快最全机经 600 题（二）187：Medium）

30. What is the range of 0.5^{-2}, 0.5^{-1}, 0.5^{0}, 0.5^{1}, 0.5^{2}?

（来源： GRE 数学最新最快最全机经 600 题（一）112：Easy）

31.

Range	Frequency
10~19	2
20~29	3
30~39	1
40~49	3
50~59	2

Quantity A: The range of the 11 numbers

Quantity B: 40

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）27：Medium）

32.

X	Frequency
10~20	5
20~30	7
30~40	9

40~50	**11**

The range of the data set shown above is 37, now 11 and 43 are added into the data set.

Quantity A: The range when 11 and 43 are added

Quantity B: 37

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）63：Medium）

标准差

33. There is a number list with a mean of 20, and standard deviation of 0

Quantity A: The range of the number list

Quantity B: 0

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）85：Easy）

34. The standard deviation of the prices of 5 houses is A. If the price of three houses all decrease by 45,000, then the new standard deviation of the prices of the 5 houses is B.

Quantity A: A

Quantity B: B

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（一）196：Medium）

35. Five points lie on line y=5x+30. If the standard deviation of all the x-coordinates of the five points is 4.6, then what is the standard deviation of all the y-coordinates of the five points?

（来源： GRE 数学最新最快最全机经 600 题（一）79：Medium）

36.

Set A={12, 13, 16, 19, 20}

Set B={12, 15, 16, 17, 20}

Quantity A: The standard deviation of numbers in Set A

Quantity B: The standard deviation of numbers in Set B

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）30：Medium）

37.

Set A={500, 600, 700, 900, 1200}

Set B={500, 600, 800, 900, 1200}

Quantity A: The standard deviation of numbers in Set A

Quantity B: The standard deviation of numbers in Set B

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）173：Medium）

38.

Quantity A: The standard deviation of all the even integers between 8 and 44 (inclusive)

Quantity B: The standard deviation of all the odd integers between 23 and 59 (inclusive)

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（一）57：Medium）

平均值&中位数&众数&极差&标准差复合

39. The range of 7 integers is 4, and the median of the 7 integers is m. The greatest number less than the median is m-3

Quantity A: The mean of the 7 integers

Quantity B: m

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）11：Hard）

40. The stock prices of three companies are x, 2x and x+2, respectively and x>2. Which of the following statement alone can be sufficient to determine the value of x?

Indicate ***all*** such statements.

A. Arithmetic Mean

B. Median

C. Range

（来源： GRE 数学最新最快最全机经 600 题（一）153：Medium）

41. List R and List S both have 100 numbers, among which 50 are overlapping. The mean of List R is smaller than the mean of List S.

Quantity A: The median of List R

Quantity B: The median of List S

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）4：Medium）

42. 7, 11, 15, 19, 23, x, y

The average of the above 7 positive integers is 13. Which of the following could be the median of the 7 numbers?

Indicate ***all*** such numbers.

A. 11

B. 12

C. 13

D. 14

E. 15

F. 16

G. 17

（来源： GRE 数学最新最快最全机经 600 题：Medium）

43. Set A consists of 5 numbers. The median of the 5 numbers is m, the difference between m and the maximum number is 6, while the difference between m and the minimum is 2.

Quantity A: m

Quantity B: The average of the 5 numbers

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）180：Medium）

44. **Set A**={6, 8, 12, 14 and x}

If x increases from 12 to 14, then which of the following values will also change?

Indicate ***all*** such values.

A. Mean

B. Mode

C. Standard deviation

（来源： GRE 数学最新最快最全机经 600 题（三）113：Medium）

45. The median of 7 positive integers is 10, and the average of these 7 numbers is 9. The only mode is 2. What is the greatest number in the set?

A. 22

B. 23

C. 24

D. 25

E. 26

（来源： GRE 数学最新最快最全机经 600 题（三）197：Hard）

2.3 计数法专题

2.3.1 集合

[专项练习]

测试用时	正确率	错题编号
/min	/17	

容斥原理&韦恩图

1. There are 45 students in a class. 23 students take math course, and 28 students take science course, while 7 students take neither of them. How many students take both math and science courses?

（来源： GRE 数学最新最快最全机经 600 题（一）94：Easy）

2. On a boat of 2,500 passengers, 1,250 of them have been to Paris, while 900 of them have been to London. If 30% of all passengers have been to both cities, then how many passengers haven’ t been to either of the two cities?

（来源： GRE 数学最新最快最全机经 600 题（一）59：Easy）

3. In a company, 54.6% of employees regard salary as the most important incentive, 47% of employees regard promotion as the most important incentive, while 30% of employees regard both incentives as important. What percentage of employees regard neither incentive as important?

%

（来源： GRE 数学最新最快最全机经 600 题（一）116：Easy）

4. In a survey of preference of pets, 40% of respondents prefer dogs, and 30% of respondents prefer cats. If 40% of respondents prefer neither dog nor cat, what percent of respondents prefer both dog and cat?

 %

（来源： GRE 数学最新最快最全机经 600 题（三）7：Easy）

5. In a class, 40 students speak Spanish, while 30 students speak French. If half of students who speak Spanish do not speak French, how many students can only speak French?

（来源： GRE 数学最新最快最全机经 600 题（三）41：Easy）

6. In a survey of 68 respondents over their pets (each of them owns at least a dog or a cat), 48 own dogs, and 34 own cats. How many respondents own cats but not dogs?

（来源： GRE 数学最新最快最全机经 600 题（三）198：Easy）

7. In a group of 50 students, 20 students join club A. Which of the following statements individually can determine the number of students who do not join club A but join club B?

Indicate ***all*** such statements.

A. The number of students who join club B

B. The number of students who do not join both clubs

C. The number of students who join club A but do not join club B

（来源： GRE 数学最新最快最全机经 600 题（一）84：Hard）

8. What' s the number of integers that are neither multiple of 3 nor multiple of 7 from 1 to 100, inclusive?

A. 56

B. 57

C. 58

D. 59

E. 60

（来源： GRE 数学最新最快最全机经 600 题（一）160：Medium）

交集最大

9. Among 60 students, 30 selected Course A, 50 selected Course B. What’ s the greatest possible number of students who selected both courses?

（来源： GRE 数学最新最快最全机经 600 题（一）48：Easy）

交集最小

10. In a class, there are 3/4 of people taking chemistry class, and there are 5/6 of people taking biology class. It is possible that a student takes neither of them. What is the minimum ratio of people taking both of these classes? Give your answer as a ***fraction***.

（来源： GRE 数学最新最快最全机经 600 题（一）133：Easy）

11. 500 respondents are asked two questions each and could answer only yes and no. 440 respondents said yes to the first question. 220 respondents said yes to the second question. At least how many respondents said yes to both questions?

（来源： GRE 数学最新最快最全机经 600 题（一）155：Easy）

交集最大与最小

12. A list contains 20 songs, Mike and Scott got the identical list. Mike marked 15 favorite songs, and Scott marked 12 songs. Which of the following cannot be the number of songs they both marked as favorite?

A. 6

B. 7

C. 8

D. 9

E. 10

（来源： GRE 数学最新最快最全机经 600 题（二）1：Medium）

13. In a company, 1/3 of employees are female, 1/2 of employees have college degrees.

Quantity A: The percentage of female employees who also have college degrees among all employees

Quantity B: 1/6

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）78：Medium）

三集合题

14. There are 210 students in a class. 160 of them take physics, 80 of them take chemistry, and 60 of them take biology. Each student has to take at least one courses. but cannot take all the three classes simultaneously. The number of students who take two classes is what percent of all the students?

Give your answer as ***fraction***.

（来源： GRE 数学最新最快最全机经 600 题（一）195：Hard）

15. Dr. Mosher call the roll ten days in a row. If Candy attended 8 times, Sam attended 7 times, and Amy attended 6 times, and if they show in class simultaneously in only one day, how many days in which exactly two of them attended?

（来源： GRE 数学最新最快最全机经 600 题（一）199：Hard）

子集

16. Set S includes n numbers and has, in total, 6 subsets that have 2 numbers. What is the value of n?

（来源： GRE 数学最新最快最全机经 600 题（一）158：Easy）

17. 80% of some polygons are hexagon, and 20% of those hexagons are regular hexagon.

Quantity A: The percent of polygons that are neither hexagons nor regular polygons

Quantity B: 16%

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）95：Medium）

2.3.2 数列

[专项练习]

测试用时	正确率	错题编号
/min	/10	

等差数列

1. In a sequence, for any integer n greater than 1, a_n is greater than its preceding term by 3 and a_{17} is 55.

Quantity A: a_{98}

Quantity B: 300

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）83：Medium）

2. What is the value of 6+12+18+24+…+294+300, where each term is a multiple of 6?

（来源： GRE 数学最新最快最全机经 600 题（三）53：Easy）

等比数列

3. The number of bacteria A and B at 08:00 AM is both 5,000. The number of bacteria A doubles every hour, while the number of bacteria B increases by 50% every hour

Quantity A: The number of bacteria A by 2:00 PM in the same day

Quantity B: The number of bacteria B by 2:00 PM in the same day

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）192：Easy）

4. In a sequence, $r_1=1, r_n=\frac{1}{5}r_{n-1}$, where n is any integer greater than 1.

Quantity A: r_5

Quantity B: $625 * r_{10}$

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）192：Easy）

5. The height a plant every day increased by 1/2 than that of the preceding day. What is the ratio of the overall height in the fourth day to that of the seventh day?

Give your answer as ***fraction***.

（来源： GRE 数学最新最快最全机经 600 题（三）37：Easy）

6. In a theatre, there are 250 people in the audience at 12:55. The show starts at 14:15. If the number of audience double every 20 minutes, then how many people will be in the audience by the time the show begins?

（来源： GRE 数学最新最快最全机经 600 题（一）27：Easy）

找规律

7. In a sequence, $a_1=2$, $a_2=4$, $a_3=14$, $a_4=64$, $a_n= d\times a_{n-1}-c$

What is the value of c+d?

（来源： GRE 数学最新最快最全机经 600 题（一）114：Easy）

8. In a sequence, $a_1=1$, for any integer n greater than 1, a_n is 12 times the square of its preceding term, $a_5=12^n$, what is the value of n?

（来源： GRE 数学最新最快最全机经 600 题（二）25：Easy）

9. In a sequence, $S_1=1$, for any integer n greater than 1, $S_n=6nS_1$, what is the value of $S_1+ S_2\cdots + 300$?

（来源： GRE 数学最新最快最全机经 600 题（三）46：Medium）

10. $a_1=6$

$a_n=a_{n-1}+2$, where n is an even integer

$a_n=a_{n-1}-8$, where n is an odd integer

Quantity A: a_7

Quantity B: -12

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题：Medium）

2.3.3 阶乘、乘法原理、排列与组合

[专项练习]

测试用时	正确率	错题编号
/min	/19	

阶乘

1.

Quantity A: 4!

Quantity B: 5!-4!

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）24：Easy）

2. n and k are integers, n>k>1

Quantity A: (n-k)!

Quantity B: n!-k!

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）8：Medium）

乘法原理

3. In a city, car plates are composed of 7 digits. Among them, the first 3 should all be letters from the 26 alphabet (except for the letter O), while the latter 4 digits should all be numbers from 0 to 9. How many possible different car plates can be formed this way?

（来源： GRE 数学最新最快最全机经 600 题（一）187：Easy）

4. Katlin’ s phone number has ten digits. If Kevin only remembers the first eight digits, what is the most times that Kevin has to try in order to call Katlin if he does not dial repetition number?

（来源： GRE 数学最新最快最全机经 600 题（三）8：Easy）

5. Three groups of people have 8, 6 and 10 people, respectively. How many ways can you select two people from all these groups such that they are from different groups?

（来源： GRE 数学最新最快最全机经 600 题（二）198：Medium）

排列

6. In how many ways can five flags of different colors (red and green colors are included) be arranged in order such that the flag in the middle has to be red or green?

（来源： GRE 数学最新最快最全机经 600 题（三）196：Easy）

7. How many ways can letter a b and c be assigned into a nine palace such that no letter is used more than once in each line and each row?

（来源： GRE 数学最新最快最全机经 600 题（三）14-Hard）

组合

8. How many more ways can you select 4 books out of 8 books than when you select 4 books out of 6 books?

（来源： GRE 数学最新最快最全机经 600 题（三）120：Easy）

9. How many different products can be formed when selecting 2 different numbers from 0, 2, 6, 8 and 12 and multiplying them together?

（来源： GRE 数学最新最快最全机经 600 题（三）47：Medium）

10. If 600<n<770, how many n are out there such that n is formed by 6 and 7 only?

（来源： GRE 数学最新最快最全机经 600 题（二）28：Easy）

11. How many positive divisors of 210 are product of two primes?

（来源： GRE 数学最新最快最全机经 600 题（一）118：Medium）

12. In how many ways can you select one Product A and two Product B out of 8 types of Product A and 6 types of Product B?

（来源： GRE 数学最新最快最全机经 600 题（三）171：Medium）

13. Six identical balls need to be put into four different bottles. If at least one ball should be included in each bottle, then how many ways can these balls be arranged?

（来源： GRE 数学最新最快最全机经 600 题（一）54：Medium）

反算法

14. The budget of 5 countries are 0.7 billion, 1.3 billion, 1.7 billion, 2.7 billion and 3.2 billion, respectively. In how many ways can you select 3 countries from all the countries such that the total budget of these 3 countries is over 4 billion?

（来源： GRE 数学最新最快最全机经 600 题（二）57：Medium）

15. How many three-digit numbers could be formed out of 2, 7 and 5 such that at least one figure is used for at least twice?

（来源： GRE 数学最新最快最全机经 600 题（一）97：Medium）

倒除法

16. 40 DVDs (17 are about psychology, 14 are about biology, and 9 are about history) need to be arranged in a bookshelf such that the 9 history-related DVDs are, on the whole, arranged in chronological order. How many ways can these DVDs be arranged?

A. (17!)(14!)(3!)

B. (17!)(14!)(9!)

C. (17!)(14!)(9!)(39)

D. (40!) / (9!)

E. 32!

（来源： GRE 数学最新最快最全机经 600 题（三）21：Hard）

17. A password is formed by 5 special characters, including an “@”, two “$” and two “#”. How many different passwords can be formed?

（来源： GRE 数学最新最快最全机经 600 题（三）190：Hard）

握手问题

18. For 7 soccer ball teams, each of them has to play with all the other teams. However, to decide which team wins, every two teams have to play 3 rounds and the team that win for the most times will ultimately win. How many rounds do all the 7 teams have to play?

（来源： GRE 数学最新最快最全机经 600 题（二）14：Medium）

19. For 7 soccer ball teams, each of them has to play with all the other teams. However, to decide which team wins, every two teams have to play 3 rounds and the team that win for the most times will ultimately win. How many rounds of game does each team have to play?

（来源： GRE 数学最新最快最全机经 600 题（二）14：Medium）

2.4 概率专题

[专项练习]

测试用时	正确率	错题编号
/min	/23	

古典概率

1. Among 50 spare parts. 2 are broken. What is the probability that both are broken when you select two spare parts from the total?

（来源： GRE 数学最新最快最全机经 600 题（一）46：Easy）

2. What is the ratio of a two-digit integer whose tens digit can be divisible by 2 to all the two-digit integers?

（来源： GRE 数学最新最快最全机经 600 题（一）198：Easy）

3. The total number of product A and B in a box is 20. The unit price of A and B is 0.2 and 0.4, respectively, and the total price of them is 5.6. What is the probability that someone randomly selects a product from the box and selects product A?

（来源： GRE 数学最新最快最全机经 600 题（二）189：Easy）

4. What is the probability that a number comprised of at least one 6 on all digits is selected when selecting a number from 1 to 1,000 (inclusive)?

（来源： GRE 数学最新最快最全机经 600 题（一）61：Medium）

5. 5 balls are in a box, including 1 red ball and 4 green balls. Of a volunteer picks up 2 balls randomly from the box, what is the probability that both balls are green?

（来源： GRE 数学最新最快最全机经 600 题（三）193：Medium）

6. Among 30 jackets, 10 are red, 10 are black and 10 are yellow. When selecting 5 out of these 30 jackets, what is the probability that 3 red jackets, 1 black jackets and 1 yellow jackets are selected?

（来源： GRE 数学最新最快最全机经 600 题（一）200：Medium）

7. What is the probability that a number whose tens digit is no more than 3 and units digit is no more than 4 is selected when selecting a number from 100 to 159 (inclusive)?

（来源： GRE 数学最新最快最全机经 600 题（一）93：Medium）

8.

Set R={-3, -2, -1, 0, 1, 2, 3}

Set T={-7, -6, -5, -4, -3, -2}

What is the probability that the product is positive when selecting one number from each set and multiply them together?

（来源： GRE 数学最新最快最全机经 600 题（三）1：Medium）

9. In a group of 8 students, 5 are girls. If you randomly select 2 students from the group and appoint one of them as monitor and the other as vice monitor. What is the probability that both students selected are girls?

（来源： GRE 数学最新最快最全机经 600 题（一）82：Medium）

10. What is the probability that A and B are both selected when you randomly select 40 people out of a pool of 100 people (A and B included)?

（来源： GRE 数学最新最快最全机经 600 题（一）68：Medium）

11. Each digit of a 3-digit integer is divisible by 3. What is the probability that the tens digit of such integers is an odd number and the hundreds digit of the integer is an even number?

（来源： GRE 数学最新最快最全机经 600 题（三）188：Medium）

12. Of the 700 members of a certain organization, 120 are lawyers. Two members of the organization will be selected at random. Which of the following is closest to the probability that neither of the members selected will be a lawyer?

A. 0.5

B. 0.6

C. 0.7

D. 0.8

E. 0.9

（来源： GRE 数学最新最快最全机经 600 题（三）96：Medium）

13. Positive integers from 1 to 9, inclusive, are written on 9 pieces of paper respectively and then put into 9 boxes. Someone randomly selects a number from the box for three times without replacement and uses these three numbers as the hundreds digit, tens digit and units digit of a three-digit integer.

Quantity A: The probability that the three-digit number is greater than 600

Quantity B: 4/9

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）133：Medium）

互斥事件/对立事件

14. The probability that Lin will decode a message is p.

Quantity A: p(1-p)

Quantity B: 0.4

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）152：Medium）

15. Probability XX of Event A means the ratio of the probability that Event A occurs to the probability that Event A does not occur. If Probability XX of getting heads when tossing a coin is 3/7, then what is the probability of getting heads when tossing the coin?

Give your answer as a ***fraction***.

（来源： GRE 数学最新最快最全机经 600 题（一）67：Easy）

16. If the probability for each cannon shoots the target is 0.6, how many cannons shoot together can you ensure the overall probability of shooting the target reach 0.99?

Indicate ***all*** such choices.

A. 3

B. 4

C. 5

D. 6

E. 7

（来源： GRE 数学最新最快最全机经 600 题（二）69：Hard）

独立事件

17. A and B are mutually independent and the probability that Event A occurs is the same as that of the probability that Event B occurs (both equals to 0.3).

Quantity A: The probability that Event A occurs when Event B does not occur

Quantity B: 0.3

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（一）69：Medium）

18. A box contains 10 red balls and 6 blue balls. A volunteer takes two balls one by one without replacement. What is the probability that the two balls are both red?

（来源： GRE 数学最新最快最全机经 600 题（二）29：Easy）

19. Both box T and box U have some white balls and black balls. There are 20 white balls and 30 black balls in box T. If a person selects 1 ball randomly from each box, then the probability that both balls are white is 0.25. What is the probability of selecting a black ball from the box U?

（来源： GRE 数学最新最快最全机经 600 题（二）17：Easy）

20. There are 10 red balls and 6 blue balls in a box. If a person takes out two balls one by one without replacement, what is the probability that the two balls have different colors?

（来源： GRE 数学最新最快最全机经 600 题（一）190：Medium）

21. There are 7 balls in a box, among which 1 is red. Someone removes balls from the box one by one without replacement and stops until he or she removes the red ball.

Quantity A: The probability that he or she stops after the third removal

Quantity B: The probability that he or she stops after the fourth removal

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（一）191：Medium）

22. Each of 10 balls has an integer 0 to 9, inclusive, painted on the side. Shane randomly pick on each time without replacement.

Quantity A: The probability that 5 is picked at the first time

Quantity B: The probability that 5 is picked not until the second time

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）29：Medium）

23. In a box, there are 1 red ball, 4 purple balls and 95 green balls. Someone randomly selects 2 balls from the box without replacement

Quantity A: The probability that one of the two balls is red

Quantity B: The probability that both balls are purple

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（三）157：Medium）

2.5 正态分布专题

[专项练习]

测试用时	正确率	错题编号
/min	/1	

1. A normal distribution of variable X has a mean of 56 and a standard deviation of 4

Quantity A: The percentage of variable X ranging from 60 to 62

Quantity B: The percentage of variable X ranging from 62 to 64

A. Quantity A is greater.

B. Quantity B is greater.

C. The two quantities are equal.

D. The relationship cannot be determined from the information given.

（来源： GRE 数学最新最快最全机经 600 题（二）10：Medium）