GRE

考 满 分 GRE

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

1.1 整数专题

[专项练习]

测试用时	正确率	错题编号
/min	/65	

数位

1. n=1234567891011121314⋯⋯498499500 (from 1 to 500)

How many digits does n have?

（来源： GRE 数学最新最快最全机经 600 题（二）3：Medium）

2. n is an integer made of some consecutive odd numbers from 1. N=13579111315⋯ What is the units digit of n if it has only 41 digits?

（来源： GRE 数学最新最快最全机经 600 题（三）55：Medium）

凑整

3. $a^2+b^2=145$. If both a and b are integers, what are the possible values of a+b?

Indicate **_all_** such values.

A. -15

B. -13

C. -6

D. -1

E. 3

F. 11

G. 17

（来源： GRE 数学最新最快最全机经 600 题（一）14：Medium）

4. $x^2+y^2=52$. Both x and y are integers and x>y

Quantity A: x

Quantity B: 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（一）181：Easy）

5. 50 guests have to be arranged into 16 tables. Each table can accommodate at most 4 guests. What is the greatest possible number of tables that accommodate only 1 guest?

（来源： GRE 数学最新最快最全机经 600 题（一）115：Easy）

6. The sum of three different positive integers is 11. Select two of the following statements that can together identify the three numbers.

A. None of those three can be 1

B. None of those three can be 4

C. None of those three can be 7

D. None of those three can be 8

（来源： GRE 数学最新最快最全机经 600 题（二）77：Medium）

7. A pencil costs $2 each and a pen costs $3 each. If Mike spent $15 on pens and pencils, then how many pens and pencils did he buy in total?

Indicate **_all_** such values.

A. 4

B. 5

C. 6

D. 7

E. 8

（来源： GRE 数学最新最快最全机经 600 题（一）156：Easy）

8. If a person hits the shaded area, he or she could get 3 points; however, if a person hits the smaller circle, he or she could get p points. If Mark gets 47 points in total, then what's the possible values of p?

Indicate **_all_** such values.

A.   p=11

B.   p=12

C.   p=13

（来源： GRE 数学最新最快最全机经 600 题（一）41：Medium）

9. Someone purchased 391 handbags and those handbags need to be shipped in cases. There are three types of cases with capacity of 5, 12 and 20. The number of handbags each case holds cannot exceed the maximum capacity of it. The price for these cases are \$1, \$2 and \$3, respectively. How much will it be greater in total price if handbags are all packaged in cases with a capacity of 5 handbags than if they are packaged in a way that ensures the minimum possible total price?

（来源： GRE 数学最新最快最全机经 600 题（一）32：Hard）

连续整数

10. Quantity A: The range of seven consecutive integers

Quantity B: 7

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）97：Easy）

11. Quantity A: The range of 10 consecutive integers

Quantity B: 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）180：Easy）

12. 70 is the median in a list formed by 77 consecutive integers. What is the smallest integer in the list?

（来源： GRE 数学最新最快最全机经 600 题（二）56：2018-12-22 机经题：Medium）

13. Among 25 consecutive integers, the median is 3 times the value of the least of them. What is the greatest integer among them?

（来源： GRE 数学最新最快最全机经 600 题（一）117：Medium）

14. The average of 14 different positive integers is 14, what is the greatest possible value of the integers?

（来源： GRE 数学最新最快最全机经 600 题（二）119：Medium）

15. The sum of N consecutive integers is -11 (2 is included in these consecutive numbers)

Quantity A: The possible value of N

Quantity B: 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）121：Hard）

正负数

16. Both x and y are integers, and 1<-x<4, 2<y<5. What is the least possible value of xy?

A.   -20

B.   -6

C.   -9

D. -2

E. -12

（来源： GRE 数学最新最快最全机经 600 题（一）111：Easy）

17. $x^4y^3z^2<0$ (x, y and z are all integers)

Quantity A: xyz

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）103：Easy）

18. If k is an integer and $121 < k^2 < 225$, then k can have at most how many values?

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）130：Medium）

19. $x^2+y^2=52$. Both x and y are integers and x>y

Quantity A: x

Quantity B: 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（一）181：Easy）

奇偶数
奇偶性的判定

20. 3n+1 is an even number

Quantity A: $(-1)^{n+1}$

Quantity B: 1

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）135：Medium）

21. f(n)=$\dfrac{n(n+1)}{2}$

Quantity A: $(-1)^{f(4m+1)}$

Quantity B: $(-1)^{f(4m+2)}$

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（一）167：Easy）

连续偶数

22. If the median of seven consecutive even integers is 2n+2, then what is the average of them?

（来源： GRE 数学最新最快最全机经 600 题（三）42：Easy）

23. x<y-4, where x and y are integers

Quantity A: The number of even integers between x and y

Quantity B: The number of odd integers between x and y

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.

因数与倍数

因数

24. For which of the following integer, the number of its even divisors is greater than that of its odd divisor?

A. 2

B. 6

C. 10

D. 20

E. 30

25. w, x, y and z are integers and 1<w<x<y<z, w·x·y·z=210

Quantity A: w+z

Quantity B: 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.

倍数

26. Set S includes all the two-digit integers that are multiples of 3 or 5. What is the range of the set of numbers?

27. Among positive integers from 1 to 19, inclusive, what is the ratio of the number of the multiples of 3 to the number of the multiples of 4?

Give your answer with *__fraction__*.

28. If 15% of the class is 16 years or older, then at least how many students are in the class?

（来源： GRE 数学最新最快最全机经 600 题（一）175：Medium）

29. In a club, 4/7 of members are female, then which of the following could be the number of male members? Indicate **_all_** such numbers.

A. 16

B. 18

C. 20

D. 24

E. 28

F. 30

（来源： GRE 数学最新最快最全机经 600 题（二）129：Hard）

30. If January 1st is a Saturday and can be expressed as Day 1/364 (the first day with 364 days left), then how can the following Tuesday after twenty weeks be expressed?

A. 142/223

B. 143/222

C. 144/221

D. 145/220

E. 146/219

（来源： GRE 数学最新最快最全机经 600 题（一）62：Hard）

最大公约数&最小公倍数

31. d is the greatest common divisor of 36 and 60, m is the least common multiple of 36 and 60

Quantity A: 36/d

Quantity B: m/60

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）145：Easy）

32. What is the number of integers that can be divisible by both 3 and 4 from 100 to 1,000, inclusive?

（来源： GRE 数学最新最快最全机经 600 题（一）193：Hard）

33. 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：Hard）

34. Which of the following set has the greatest number of integers from 1 to 100, inclusive?

A. The multiple of 3

B. The multiple of 4

C. The multiple of 5

D. The multiple of 3 and the multiple of 4

E. The multiple of 4 and the multiple of 5

（来源： GRE 数学最新最快最全机经 600 题（三）184：Hard）

35. A and B are sorting out 160 books. It takes A 20 minutes to sort out a book, while it takes B 12 minutes to sort out a book. After negotiation, A and B decides to sort out all the books together. They start at the same time and finish the task also at the same time.

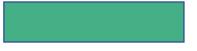**Quantity A:** The number of books that A would sort out when they finished

Quantity B: 60

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）52：Easy）

整除

36. The number in Set M are all three-digit integers with the form J-K-L, where J, K and L are all non-zero digits. If J-K and K-L (both are two-digit numbers) can be divisible by 9, then how many integers are in this set?

（来源： GRE 数学最新最快最全机经 600 题（一）189：Hard）

37. 24 is an integer which is divisible by its units digit. How many integers which can be divisible by their units digit from 10 to 70, inclusive?

（来源： GRE 数学最新最快最全机经 600 题（三）79：Hard）

38. $\dfrac{8\times7\times6\times5\times4\times3}{2^x\times3^y}$ is an integer. What is the greatest possible value of xy?

（来源： GRE 数学最新最快最全机经 600 题（三）163：Medium）

商和余数

求余数

39. n is an integer greater than 1000

Quantity A: The remainder when n is divided by 3

Quantity B: The remainder when n is divided by 17

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）84：Medium）

40. k is a positive integer greater than 1

Quantity A: The remainder when k^2-k is divided by 2

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.

41. Quantity A: The remainder when $10^8+10^9+10^{10}+10^{11}$ is divided by 11

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.

42. n is a positive integer, and n^2 is divisible by 7.

Quantity A: The remainder when n is divided by 7

Quantity B: 1

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.

43. Both m and n are positive integers.

Quantity A: The remainder when (m+n) is divided by 2

Quantity B: The remainder when (m^n) is divided by 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.

44. x<y, the remainder of x when divided by 9 is equal to the remainder of y when divided by 9

Quantity A: The remainder when x is divided by 3

Quantity A: The remainder when y is divided by 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（三）28：Medium）

45. What is the remainder when 3^{100} is divided by 8?

（来源： GRE 数学最新最快最全机经 600 题（三）98：Medium）

求余数&奇偶性

46. The remainder is 30 when 6n is divided by 75, which of the following could be the remainder when 7n is divided by 75?

Indicate *all* such numbers.

A. 5

B. 10

C. 15

D. 25

E. 35

F. 45

G. 60

（来源： GRE 数学最新最快最全机经 600 题（二）200：Hard）

幂指数的个位循环性

47. What is the units digit of 23^{21}-23?

（来源： GRE 数学最新最快最全机经 600 题（三）83：Medium）

48. What is the units digit of $2^{25}-53$?

49. What is the units digit of the positive difference between 32^{19} and 32?

50. What is the units digit of $5x^{3}$, where x is a positive even integer?

51. What is the units digit of $2^{2012}+3^{2012}+5^{2012}+7^{2012}$?

52. What is the units digit of the positive difference between $3^{7}5^{4}7^{11}$ and $4^{2}5^{3}11$?

53. x, n and k are integers, $0<x<10^{7}$, $x=n^{k}$, and the units digit of x is 5. x is both a perfect square and a perfect cube. What is the value of x?

54. Which of the following number could be the units digit of $4n^{2}+3$?

Indicate **_all_** such numbers.

A. 2

B. 3

C. 4

D. 5

E. 7

F. 9

（来源： GRE 数学最新最快最全机经 600 题（二）144：Easy）

除数为特殊值时判断余数

55. What's the remainder when 3^{27} is divided by 5?

（来源： GRE 数学最新最快最全机经 600 题（一）19：Medium）

56. What's the remainder when 9^{78} is divided by 5?

（来源： GRE 数学最新最快最全机经 600 题（一）194：Medium）

质数&合数

57. x and y are positive integers less than 30 where x is a prime, y is and odd but not a prime. Which of the following **_CANNOT_** be x+y?

A. 48

B. 50

C. 52

D. 54

E. 56

（来源： GRE 数学最新最快最全机经 600 题（二）97：Medium）

58. mn=p, where p is a prime. What is the value of m+n in terms of p?

（来源： GRE 数学最新最快最全机经 600 题（三）155：Easy）

59. The sum of two primes is 43

Quantity A: The product of the two primes

Quantity B: 83

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）134：Medium）

60. Both m and n are primes, m<n, and m+n is an odd number

Quantity A: m

Quantity B: 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）168：Easy）

61. The number of children in a family is a prime number and is less than 10. If there are one more boys than girls and both the number of boys and girls are primes, then how many children does the family have?

（来源： GRE 数学最新最快最全机经 600 题（一）166：Easy）

质因数

62. f(100)=the product of all the even integers from 2 to 100, inclusive

Quantity A: 40

Quantity B: The largest prime factor of f(100)

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）199：Medium）

63. P is a prime number

Quantity A: The sum of all prime factors of 5P

Quantity B: The sum of all prime factors of 6P

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）69：Easy）

64. What is the greatest prime factor of $79^2 - 50^2$?

（来源： GRE 数学最新最快最全机经 600 题（三）75：Easy）

整数各知识点复合

65. $n = 4(x+20)^2 - 1$, where x is a positive integer. Which of the following statements must be true?

Indicate **_all_** such statements.

A. n is an odd integer

B. n is a multiple of 5

C. The remainder is 3 when n is divided by 4

（来源： GRE 数学最新最快最全机经 600 题（三）73：Easy）