

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

3.1 代数式运算专题

[专项练习]

测试用时	正确率	错题编号
/min	/1	

1. $(x+1)/x=10$

Quantity A: $(x+1)^2$

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 (一) : Easy)

3.2 指数运算法则专题

[专项练习]

测试用时	正确率	错题编号
/min	/11	

指数运算

1. If $2x+y=5$, then what is the value of $(9^x)(3^y)$?

(来源：GRE 数学最新最快最全机经 600 题 (三) 147 : Easy)

2. 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)

3. $y = 2^{-r^2}$, where r is a positive integer, which of the following could be the value of y ?

Indicate all such values.

- A. 2
- B. 1
- C. $1/2$
- D. 0
- E. -1

(来源：GRE 数学最新最快最全机经 600 题 (二) 188 : Easy)

4. $a = (-1/37)^{12}$, what is the value of 37^{-12} ?

- A. $-a-1$
- B. $a-1$
- C. a

D. $-a$

E. \sqrt{a}

(来源：GRE 数学最新最快最全机经 600 题 (一) 180 : Easy)

5. $-2 < x < 0$

Quantity A: $x^3 + 1/x^3$

Quantity B: $x + 1/x$

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) 52 : Medium)

6. $r^3 - r = r - r^3$

Quantity A: r

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) 156 : Medium)

7. Both m and n are negative integers and $m < n$

Quantity A: $7 + 10^m$

Quantity B: $5 + 10^n$

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) 181 : Medium)

8. $a > 0, x \neq 0$

Quantity A: ax^4

Quantity B: $(ax)^4$

- 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 (三) 159 : Medium)

9. n is an integer

Quantity A: $(1/2)^n$

Quantity B: $(1/3)^n$

- 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) 59 : Medium)

10. A number can be transformed into both a perfect square and a perfect cube. If its units digit is 5, and is less than 100,000, then the number must be?



(来源：GRE 数学最新最快最全机经 600 题 (三) 51 : Easy)

根号运算

11.

Quantity A: $\sqrt[3]{250}$

Quantity B: $6 \times \sqrt[3]{2}$

- 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 (三) 5 : Medium)

3.3 解线性方程专题

[专项练习]

测试用时	正确率	错题编号
/min	/3	

1. $x[(y+75)+(15-y)]=900$

Quantity A: xy

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 (三) : Easy)

2. What is the value of $3.28 \times 6^{25} - 0.26 \times 6^{26}$?

(来源：GRE 数学最新最快最全机经 600 题 (三) 146 : Easy)

3. N family have 2 boys and 1 girl each, M family have 1 boy and 2 girls each. In total, there are 11 boys and 10 girls among these M+N family. What is the sum of N+M?



(来源：GRE 数学最新最快最全机经 600 题 (三) 116 : Easy)

3.4 解二次方程专题

[专项练习]

测试用时	正确率	错题编号
/min	/	

1. The equation $ax^2+5x-6=0$ has two solutions. One is 3 and the other one is c

Quantity A: a

Quantity B: c

- 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) 197 : Medium)

2. a and b are two solutions of the quadratic formula $x^2-x-20=0$

Quantity A: $(a-b)^2$

Quantity B: $(a+b)^2$

- 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 (三) 61 : Easy)

3. The equation $x^2+kx+1=0$ has two solutions t and r, and $t<r$. k is a constant.

Quantity A: t

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 (三) 61 : Hard)

3.5 解线性不等式专题

[专项练习]

测试用时	正确率	错题编号
/min	/14	

不等式运算

1. 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 : Medium)

2. How many different points (x, y) , where x and y are both positive integers, in xy -plane satisfy the inequality $x+y \leq 200$?

(来源：GRE 数学最新最快最全机经 600 题 (三) 92 : Hard)

3. Both x and n are positive integers, and $8x/n < x/200$. What is the least possible value of n ?

(来源：GRE 数学最新最快最全机经 600 题 (一) 154 : Medium)

4. $x < y < z$, and the median of the three numbers is less than the mean (arithmetic mean)

Quantity A: $x+z$

Quantity B: $2y$

- 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) 174 : Medium)

5. $x^2 + y^2 = 1$, where $x \geq 0$, $y \geq 0$, which of the following must be true?

Indicate **all** such statements.

- A. $x \geq 1$
- B. $y \leq 1$
- C. $y \geq 1$
- D. $x + y \geq 1$
- E. $x + y \leq 1$

(来源：GRE 数学最新最快最全机经 600 题 (三) 49 : Medium)

6. For which of the following inequalities is the range of x equals to $(0, 1)$?

Indicate **all** such inequalities.

- A. $|x| < 1$
- B. $x^2 < x$
- C. $x^3 < x^2$
- D. $x^5 < x^3$

(来源：GRE 数学最新最快最全机经 600 题 (一) 22 : Medium)

比大小题

7. $2 < x < 5$, $1/10 < y < 1/5$

Quantity A: $x + y$

Quantity B: $(1/x) + (1/y)$

- 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.

(来源：GRE 数学最新最快最全机经 600 题 (三) 81 : Medium)

8. $x + y > y$, $x - y < x$

Quantity A: x

Quantity B: 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.

(来源：GRE 数学最新最快最全机经 600 题 (二) 44 : Easy)

9. $a < b < 0$

Quantity A: ab

Quantity B: $b - a$

- 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) 115 : Easy)

10. $0 < s < t$

Quantity A: $6s$

Quantity B: $5t$

- 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) 92 : Medium)

11. m , n and p are all larger than 0 but smaller than 1

Quantity A: $m + np$

Quantity B: $(m + n)p$

- 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) 72 : Medium)

12. $1 < x < 2$

Quantity A: $\frac{1}{x} + \frac{2}{x} + \frac{3}{x}$

Quantity B: $x + \frac{x}{2} + \frac{x}{3}$

- 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) 183 : Medium)

13. $xy < x + y$

Quantity A: $\frac{1}{x} + \frac{1}{y}$

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 (三) 143 : Medium)

14. $0 < x < y < 1/2$, $1/2 < r < t < 1$

Quantity A: $(x+y)(r+t)$

Quantity B: $r+t(x+y)$

- 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.

(来源: GRE 数学最新最快最全机经 600 题 (三) 54 : Medium)

3.6 函数专题

[专项练习]

测试用时	正确率	错题编号
/min	/10	

1. For any real number x , $g(x) = (1/2)x - 1$, $f(x) = (1/3)x + 3$

Quantity A: $g(f(c))$, where c is a real number

Quantity B: $f(g(c))$, where c is a real number

- 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) 71 : Medium)

2. $H(y) = y + \frac{1}{y}$

Quantity A: $H(H(\frac{1}{9}))$

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 (一) 30 : Easy)

3. $f(n) = \frac{n(n+1)}{2}$

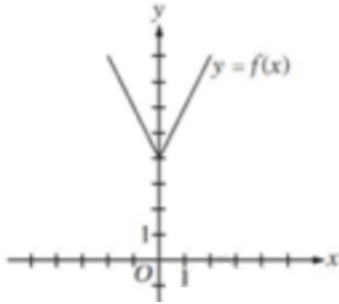
Quantity A: $(-1)^{f(4m+1)}$

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)



4. The figure above shows the graph of a function f , defined by $f(x) = |2x| + 4$ for all numbers x . For which of the following functions g defined for all numbers x does the graph of g intersect the graph of f ?
- A. $g(x) = x - 2$
 - B. $g(x) = x + 3$
 - C. $g(x) = 2x - 2$
 - D. $g(x) = 2x + 3$
 - E. $g(x) = 3x - 2$

(来源：GRE 数学最新最快最全机经 600 题 (三) 90 : Easy)

新定义函数

5. $f(x)$ is one more than the greatest integer less than x

Quantity A: $f(1.75)$

Quantity B: $f(1.05)$

- 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) 144 : Easy)

6. $p \# = (p - 1)^2$

Quantity A: $(a + 1) \# / a^2$

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 (三) 77 : Easy)

7. $x \nabla y = x - 2y$

Quantity A: $1 \nabla (2 \nabla 3)$

Quantity B: $(1 \nabla 2) \nabla 3$

- 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) 24 : Easy)

8. If $p = r^n$, where r is a prime number, and n is a positive integer, then define $p \triangle = p \times n$. For example, $25 = 5^2$, then $25 \triangle = 25 \times 2 = 50$. Therefore, what is the value of $32 \triangle$?

(来源：GRE 数学最新最快最全机经 600 题 (三) 48 : Easy)

分段函数

9.

$$a \boxed{*} b = \begin{cases} \frac{2b}{a}, & a \geq b \\ \frac{2a}{b}, & a < b \end{cases}$$

Quantity A: $\frac{1}{3} \boxed{*} \frac{1}{6}$

Quantity B: $\frac{1}{2} \boxed{*} \left(\frac{4}{3} \boxed{*} \frac{5}{3} \right)$

- 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) 29 : Medium)

10. A charity and a company raises funds together. However, the funds the company is supposed to raise follows the rules below.

The funds the charity is supposed to raise	The funds the company is supposed to raise
Between \$0 and \$9,000	\$1 for every \$3
Over \$9,000	\$2 for every \$5

If they have to raise \$68,000 in total, then how much money does the charity need to raise?

(来源：GRE 数学最新最快最全机经 600 题 (一) 165 : Medium)

3.7 坐标几何专题

[专项练习]

测试用时	正确率	错题编号
/min	/20	

直线方程

1. In an xy -plane, the graph of $y=x^2+5$ passes through point $(0, b)$ and point $(a, 10)$

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 (二) 57 : Easy)

2. A point $A(3s, 2s-3)$ is on the line $y=-x-4$, what is the value of s ?

(来源：GRE 数学最新最快最全机经 600 题 (二) 164 : Easy)

两点距离公式

3. Set S contains all points (x, y) where x and y are integers

Quantity A: The number of points in Set S such that the distance between (x, y) and $(7, 5)$ is 2

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 (二) 93 : Medium)

4. Line k passes through point $(7, 7)$ and is perpendicular to Line $l: y = -x + 4$. If the distance between Point O and point $(7, 7)$ is the same as the distance between Point O and the intersection point of line l and line m , then Point O could be?

Indicate **all** such points.

- A. $(0, 9)$
- B. $(1, 8)$
- C. $(2, 6)$
- D. $(4, 5)$
- E. $(-3, 12)$
- F. $(-1, 8)$

(来源：GRE 数学最新最快最全机经 600 题 (二) 70 : Medium)

5. The radius of a circle is 5. $(6, 0)$ and $(0, y)$ are two ends of the diameter. What is the value of y ?



(来源：GRE 数学最新最快最全机经 600 题 (三) 38 : Easy)

6. The distance between $(a, 2)$ and $(b, 6)$ is 5

Quantity A : $|a - b|$

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) 23 : Medium)

7. In the xy -plane, the coordinate of R and S is $(1, 7)$ and $(1, 1)$, respectively. The x -coordinate of T is 3, and the y -coordinate is greater than 4. Which one of the following statements must be true?

Indicate **all** such statements.

- A. $ST > RT$
- B. $SR > RT$
- C. $SR > ST$

D. $RT > ST$

(来源：GRE 数学最新最快最全机经 600 题 (三) 17 : Medium)

点到直线距离

8. Point Q is on the line l. The distance between point P and line l is 2, $PQ=3$

Quantity A: The number of point P

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 (三) 138 : Easy)

斜率

9. In the xy-plane, the y-intercept of a line is 6. the line pass through $(a, -2)$, where $a > 0$

Quantity A: The slope of the line

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) 127 : Easy)

10. In the xy-plane, line m (not shown) has a positive slope and a positive x-intercept. Line m intersects which of the quadrants?

Indicate **all** such quadrants.

- A. Quadrant I
- B. Quadrant II
- C. Quadrant III
- D. Quadrant IV

(来源：GRE 数学最新最快最全机经 600 题 (二) 140 : Easy)

截距

11. $(-2, 6)$ and $(4, 3)$ are on line m . What is the y -intercept of line m ?



(来源：GRE 数学最新最快最全机经 600 题 (三) 152 : Easy)

12. In xy -plane, point $(-3, 2)$ is on line k , and the line intersects with the two axes.

Quantity A: x -intercept of line k

Quantity B: y -intercept of line 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) 195 : Easy)

13. In the xy -plane, the slope of line l is p , the slope of line n is q , the y -intercept of line l is f , and the y -intercept of line n is j . $0 < q < p$, $0 < f < j$.

Quantity A: The x -intercept of line l

Quantity B: The x -intercept of line n

- 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) 19 : Medium)

14. The slope of line m is d , and the y -intercept is a . The slope of line n is b , the y -intercept is c . $0 < c < a$, $0 < d < b$

Quantity A: The x -intercept of line m

Quantity B: The x -intercept of line n

- 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) 109 : Medium)

抛物线

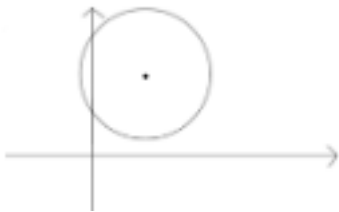
15. $y_1 = 2x^2 - 2$, $y_2 = -2x^2 - 2$,

How many points of intersection do y_1 and y_2 have?



(来源：GRE 数学最新最快最全机经 600 题 (三) 128 : Easy)

圆的解析方程



16. The center of the circle is (4, 6)

Quantity A: The radius of the circle

Quantity B: 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 (一) 31 : Easy)

17. The center of a circle with radius 50 lies at the origin. Which of the following points are on the circle?

Indicate all such points.

- A. (0, 50)
- B. (14, 48)
- C. (30, 40)
- D. (25, 25)
- E. (-20, 70)

(来源：GRE 数学最新最快最全机经 600 题 (二) 61 : Easy)

18. A circle centered with the origin in the xy -plane, and the radius of the circle is 5. A line with slope $1/2$ passes through the origin. What is the coordinate of the intersection point of the line and the circle in the first quadrant?

(来源：GRE 数学最新最快最全机经 600 题 (一) 171 : Easy)

主要概念综合

19. Line k passes through point $(7, 7)$ and is perpendicular to Line l $y = -x + 4$. The midpoint of the intersection point of line l and line m and Point $(7, 7)$ is Point (a, b)

Quantity A: $a + b$

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) 86 : Medium)

解析几何&几何

20. In the xy -plane, $A(1, 0)$, $B(6, 0)$ and $C(14, 10)$ are three vertexes of a triangle, what is the area of $\triangle ABC$?

(来源：GRE 数学最新最快最全机经 600 题 (三) 128 : Easy)