

数学冲刺

GMAT



第三章
代数

本节课授课要点

3.1

代数核心知识及重点题目

3.1 代数核心知识及重点题目

代数基本公式

$$(a+b)^2 = a^2 + 2ab + b^2 \quad a^3 - b^3 = (a-b)(a^2 + ab + b^2)$$

$$(a-b)^3 = a^3 - 3a^2b + 3ab^2 - b^3 \quad a^3 + b^3 = (a+b)(a^2 - ab + b^2)$$

$$a^2 - b^2 = (a+b)(a-b) \quad (a+b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$

3.1 代数核心知识及重点题目

$$\frac{0.99999999}{1.0001} - \frac{0.999999991}{1.0003} =$$

- A. 10^{-8}
- B. $3(10^{-8})$
- C. $3(10^{-4})$
- D. $2(10^{-4})$
- E. 10^{-4}

3.1 代数核心知识及重点题目

指数公式

$$a^x \cdot a^y = a^{x+y}$$

$$a^x \div a^y = a^{x-y}$$

$$(a^x)^y = a^{xy}$$

$$a^{\frac{1}{x}} = \sqrt[x]{a}$$

$$a^x \cdot b^x = (ab)^x$$

$$a^{-x} = \frac{1}{a^x}$$

$$a^0 = 1 (a \neq 0)$$

$$a^{\frac{n}{m}} = \sqrt[m]{a^n}$$

3.1 代数核心知识及重点题目

Is x^3 equal to 125 ?

(1) $x > 4$

(2) $x < 6$

3.1 代数核心知识及重点题目

If n is an integer and $x^n - x^{-n} = 0$, what is the value of x ?

(1) x is an integer.

(2) $n \neq 0$

3.1 代数核心知识及重点题目

绝对值与不等式

3.1 代数核心知识及重点题目

If y is an integer and $y = |x| + x$, is $y=0$?

(1) $x < 0$

(2) $y < 1$

3.1 代数核心知识及重点题目

- 对于指数不等式，底要从 $<-1, (-1, 0), (0, 1), >1$ 四个区间考虑。
- 不要忽略 $-1, 0, 1$ 三个特殊情况
- 情况较复杂，试数最保险。

3.1 代数核心知识及重点题目

If $x > y^2 > z^4$, which of the following statement could be true?

I. $x > y > z$

II. $z > y > x$

III. $x > z > y$

I only

I and II only

I and III only

II and III only

I II and III

3.1 代数核心知识及重点题目

Is $xy + z = z$, is $|x - y| > 0$?

(1) $x = 0$

(2) $y = 0$

3.1 代数核心知识及重点题目

不等式应用

- ◆ 核心：抓住临界点

3.1 代数核心知识及重点题目

A certain right triangle has sides of length x, y and z , where $x < y < z$. If the area of this triangular region is 1, which of the the following indicates all of the possible values of y ?

A. $y > \sqrt{2}$

R. $\frac{\sqrt{3}}{2} < y < \sqrt{2}$

C. $\frac{\sqrt{2}}{3} < y < \frac{\sqrt{3}}{2}$

D. $\frac{\sqrt{3}}{4} < y < \frac{\sqrt{2}}{3}$

E. $y < \frac{\sqrt{3}}{4}$

3.1 代数核心知识及重点题目

Material A costs \$3 per kilogram ,and material B costs \$5 per kilogram .If 10 kilograms of material K consists of x kilograms of material A and y kilograms of material B ,is $x > y$?

(1) $y > 4$

(2) The cost of the 10 kilograms of material K is less than \$40

A. Statement (1) ALONE is sufficient ,but statement (2) alone is not sufficient .

B. Statement (2) ALONE is sufficient ,but statement (1) alone is not sufficient .

C. BOTH statement TOGETHER are sufficient ,but NEITHER statement ALONE is sufficient

D. EACH statement ALONE is sufficient

E. Statement (1) and (2) TOGETHER are NOT sufficient

3.1 代数核心知识及重点题目

定义性运算

3.1 代数核心知识及重点题目

The operation $*$ represents either addition, subtraction, or multiplication of integers, what is the value of $1*0$?

(1) $0*2=2$

(2) $2*0=2$

A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient.

B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient.

C. BOTH statement TOGETHER are sufficient, but NEITHER statement ALONE is sufficient.

D. EACH statement ALONE is sufficient.

E. Statement (1) and (2) TOGETHER are NOT sufficient.

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3.1

代数核心知识及重点题目

预告下节课授课要点

4.1

几何核心知识点及重点题目

THANK YOU