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Lecture Six

(文字应用题)

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本节课授课要点

文字应用题

- 工作问题
- 利息问题
- 集合问题（文氏题）
- 集合问题（表格法）
- 排列组合问题
- 概率问题
- 描述统计学

文本

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1. A small water pump would take 3 hours to fill an empty tank. A larger pump would take 2 hours to fill the same tank. How many hours would it take both pumps, working at their respective constant rates, to fill the empty tank if they began pumping at the same time?

(A) 1
(B) 1.2
(C) 1.5
(D) 1.8
(E) 2

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2. Six machines, each working at the same constant rate, together can complete a certain job in 12 days. How many additional machines, each working at the same constant rate, will be needed to complete the job in 8 days?

(A) 3
(B) 4
(C) 6
(D) 8
(E) 9

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1. Mary invested $14,000 for 3 years in a certificate of deposit paying 9.25% simple annual interest. How many more interest would Mary have received if the interest rate on this certificate had been 9.75% simple annual interest?

(A) $21
(B) $210
(C) $420
(D) $2,100
(E) $4,200

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2. A 2-year certificate of deposit is purchased for k dollars. If the certificate earns interest at an annual rate of 6 percent compounded quarterly, which of the following represents the value, in dollars, of the certificate at the end of the 2 years?

(A) $(1.06)^2 k$

(B) $(1.06)^8 k$

(C) $(1.015)^2 k$

(D) $(1.015)^8 k$

(E) $(1.03)^4 k$

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1. All trainees in a certain aviator training program must take both a written test and a flight test. If 70 percent of the trainees passed the written test, and 80 percent of the trainees passed the flight test, what percent of the trainees passed both tests?

(1) 10 percent of the trainees did not pass either test.

(2) 20 percent of the trainees passed only the flight test.

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2. In a marketing survey for products some people were asked which of the products, if any, they use. Of the people surveyed, a total of 400 use A, a total of 400 use B, a total of 450 use C, a total of 200 use A and B simultaneously, a total of 175 use B and C simultaneously, a total of 200 use C and A simultaneously, a total of 75 use A, B, and C simultaneously, and a total of 200 use none of the products. How many people were surveyed?

(A) 950
(B) 975
(C) 1,000
(D) 1,025
(E) 1,050

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3. How many integers between 1 and 100, inclusive, can be divided by none of 2, 3, and 5 ?

(A) 24

(B) 26

(C) 28

(D) 30

(E) 32

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4. In a certain class, 10 students can play the piano, 14 students can play the violin, 11 students can play the flute. If 3 students can play exactly three instruments, 20 students can play exactly one instrument, how many students can play exactly two instruments?

(A) 3

(B) 6

(C) 9

(D) 12

(E) 18

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5. A group of 15 people could speak Spanish, German, or French. $\frac{1}{3}$ of the group can speak Spanish, $\frac{2}{5}$ of the group can speak German, and $\frac{2}{3}$ of the group can speak French. If only one people can speak exactly three languages, how many people can speak exactly two languages?

(A) 3
(B) 4
(C) 5
(D) 6
(E) 7

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1. A shipment of banners contains banners of two different shapes, triangular and square, and two different colors, red and green. In a particular shipment 26% of the banners are square and 35% of the banners are red. If 60% of the red banners in the shipment are square, what is the ratio of red triangular banners to green triangular banners?

(A) $\frac{7}{50}$ (B) $\frac{3}{13}$ (C) $\frac{7}{30}$ (D) $\frac{13}{37}$ (E) $\frac{35}{26}$

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2. One-fifth of the light switches produced by a certain factory are defective. Four-fifths of the defective switches are rejected and $\frac{1}{20}$ of the nondefective switches are rejected by mistake. If all the switches not rejected are sold, what percent of the switches sold by the factory are defective?

(A) 4% (B) 5% (C) 6.25% (D) 11% (E) 16%

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1. 晚会上有5个不同的唱歌节目和3个不同的舞蹈节目，问：分别按以下要求各可排出几种不同的节目单?

（1）3个舞蹈节目排在一起；

（2）3个舞蹈节目彼此隔开；

（3）3个舞蹈节目先后顺序一定.

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2. In a meeting of 3 representatives from each of 6 different companies, each person shook hands with every person not from his or her own company. If the representatives did not shake hands with people from their own company, how many handshakes took place?

(A) 45

(B) 135

(C) 144

(D) 270

(E) 288

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3. In how many distinguishable ways can the 7 letters in the word MINIMUM be arranged, if all the letters are used each time?

(A) 7
(B) 42
(C) 420
(D) 840
(E) 5040

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1. 一只袋中装有5只乒乓球，其中3只白色，2只红色. 现从袋中取球2次，每次1只，取出后不再放回. 试求：

（1）2只球都是白色的概率；

（2）2只球颜色不同的概率；

（3）至少有1只白球的概率.

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2. From a group of 3 boys and 3 girls, 4 children are to be randomly selected. What is the probability that equal numbers of boys and girls will be selected?

(A) $\frac{1}{10}$ (B) $\frac{4}{9}$ (C) $\frac{1}{2}$ (D) $\frac{3}{5}$ (E) $\frac{2}{3}$

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3. Six cards numbered from 1 to 6 are placed in an empty bowl. First one card is drawn and then put back into the bowl; then a second card is drawn. If the cards are drawn at random and if the sum of the numbers on the cards is 8, what is the probability that one of the two cards drawn is numbered 5 ?

(A) $\frac{1}{6}$ (B) $\frac{1}{5}$ (C) $\frac{1}{3}$ (D) $\frac{2}{5}$ (E) $\frac{2}{3}$

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4. 2把钥匙，放到有5把钥匙的钥匙链中，

相邻的概率为多少 (分直线和环形)?

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5. 3个打字员为4家公司服务，每家公司各有1份文件录入，问每个打字员都收到文件的概率?

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6. What is the probability that events A and B both occur?

(1) The probability that event A occurs is 0.8.

(2) The probability that event B occurs is 0.6.

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1. 算术平均数 (Average or Arithmetic Mean)：所有数据之和除以数据个数.

2. 中数 (Median)：将所有数据从小到大排列，取中间的数或中间两个数的算术平均数.

3. 众数 (Mode)：一组数据中出现频率最高的数. 一组数据中可能有不止一个众数.

4. 极差 (Range)：一组数据中最大数与最小数之差.

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1. The 10 households on a certain street have household incomes that range from $34,000 to $150,000 and an average (arithmetic mean) household income of $60,000. If the household with the highest income and the one with the lowest income are excluded, what is the average household income for the remaining 8 households?

(A) $41,600

(B) $47,000

(C) $52,000

(D) $61,000

(E) $75,000

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2. For the positive numbers n, n + 1, n + 2, n + 4 and n + 8, the mean is how much greater than the median?

(A) 0

(B) 1

(C) n + 1

(D) n + 2

(E) n + 3

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3. The least and greatest numbers in a list of 7 real numbers are 2 and 20, respectively. The median of the list is 6, and the number 3 occurs most often in the list. Which of the following could be the average of the numbers in the list?

I. 7
II. 8.5
III. 10

(A) I only
(B) I and II only
(C) I and III only
(D) II and III only
(E) I, II and III

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5. 方差 (Variance)：一组数据中每个数与算术平均数之差的平方和的算术平均数.

6. 标准方差 (Standard Deviation)：方差的平方根.

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4. The standard deviation of four numbers a, b, c, and d is M, then the standard deviation of which of the following MUST be M ?

(A) $\sqrt{a^2}, \sqrt{b^2}, \sqrt{c^2}, \sqrt{d^2}$

(B) a^2, b^2, c^2, d^2

(C) 2a, 2b, 2c, 2d

(D) a+2, b+2, c+2, d+2

(E) a+2, b-2, c+2, d-2

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- Lecture Two　GMAT数学考试题型
- Lecture Three　基本数论
- Lecture Four　代数计算
- Lecture Five　初等几何
- Lecture Six　文字应用题

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The End

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结课赠言