# 目录

# 2020 年管理类联考数学串讲讲义

## 第一章　考点归纳及题型预测

说明：知识点或题型后面标注△为次重点，△△为重点考试内容，△△△为常考内容。（下同）

## 第一节 实数、绝对值、比和比例、均值不等式

一、考点归纳

**1、实数（△）**

（1）实数的运算：等差（等比）数列，裂项相消，乘法公式，换元法；

（2）有理数与无理数混合运算：$\alpha, \beta \in Q$ 是无理数，则有

$$\alpha + \beta \times A = 0 \Rightarrow \alpha = \beta = 0 。$$

**2、实数的性质（△△）：**

**（1）奇偶性（2）质数合数（3）约数倍数（4）带余除法**

（1）奇偶性：可通过和或积的奇偶性判断数的奇偶性；

【注】$x, x^2, \cdots x^n, \sqrt{x}, \sqrt[3]{x}, \cdots, \sqrt[n]{x}$ (开得出) 奇偶性相同，$x, |x|$ 的奇偶性相同。

（2）质数与合数：$2, 3, 5, 7, 11, 13, 17, 19$；最小的合数 4；

【注】2 是质数中最常用的，往往可以将 2 代入验证。

（3）最大公约数与最小公倍数：$(a, b) \times [a, b] = a \times b$ 。

（4）整除与带余除法：遇到整除可转化为倍数关系研究。

**3、绝对值（△△△）**

（1）意义：

代数意义，即通过给定的变量范围去掉绝对值，或反之；

几何意义，即点到点的距离。

（2）非负性：$\sqrt{a^2} = |a|$ ；

（3）自比性：$\dfrac{|a|}{a} = \dfrac{a}{|a|} = \begin{cases} 1, a > 0 \\ -1, a < 0 \end{cases}$

（4）三角不等式：$\big||a| - |b|\big| \le |a \pm b| \le |a| + |b|$ ，注意等号成立的条件。

（5）绝对值函数图像相关性质。

**4、比和比例（△）**

等比定理：$\dfrac{a}{b} = \dfrac{c}{d} = \dfrac{a+c}{b+d}(b+d \neq 0)$；

**5、均值不等式（△△△）**

$$\frac{x_1 + x_2 + \cdots x_n}{n} \geq \sqrt[n]{x_1 x_2 \cdots x_n}$$

**【注意】**一正二定三相等，取最值时，应考虑何时取到，易有陷阱。

**二、考点预测**

**【考点 1】实数**

**（1）实数的计算（△）**

**【思路点拨】**等差（等比）数列，裂项相消，乘法公式，换元法

**【例 1.1】**（2009.1）设直线 $nx + (n+1)y = 1$（$n$ 为正整数）与坐标轴围成的三角形面积

为 $S_n$，$S_1 + S_2 + \cdots + S_{2009} =$（　　）。

$A\ \dfrac{1}{2}\dfrac{2009}{2008}$　　　$B\ \dfrac{1}{2}\dfrac{2008}{2009}$　　　$C\ \dfrac{1}{2}\dfrac{2009}{2010}$　　　$D\ \dfrac{1}{2}\dfrac{2010}{2009}$　　　$E$ 以上结论均不正确

**【答案】**$C$

**【解析】**

**【例 1.2】**（2008.1）$\dfrac{(1+3)(1+3^2)(1+3^4)(1+3^8)\cdots(1+3^{32}) + \dfrac{1}{2}}{3 \times 3^2 \times 3^3 \times 3^4 \cdots \times 3^{10}} =$（　　）。

$A\ \dfrac{1}{2} \times 3^{10} + 3^{19}$　　　$B\ \dfrac{1}{2} + 3^{19}$　　　$C\ \dfrac{1}{2} \times 3^{19}$　　　$D\ \dfrac{1}{2} \times 3^9$　　　$E$ 以上结论均不正确

**【答案】**$D$

**【解析】**

**【例 1.3】**（2015.12）已知 $M = (a_1 + a_2 + \cdots + a_{n-1})(a_2 + a_3 + \cdots + a_n)$，

$N = (a_1 + a_2 + \cdots + a_n)(a_2 + a_3 + \cdots + a_{n-1})$，则 $M > N$

（1）$a_1 > 0$　（2）$a_1 a_n > 0$

【答案】$B$

【解析】


**（2）有理数与无理数混合运算**

**【思路点拨】一般要对有理数与无理数进行分类合并再计算**

【例1.4】（2009.10）$x, y \in Q$ 是有理数，且满足 $(1+2\sqrt{3})x + (1-\sqrt{3})y - 2 + 5\sqrt{3} = 0$，则 $x, y$ 的值分别为（  ）。

$A$ 　$1, 3$　　$B$ 　$-1, 2$　　$C$ 　$-1, 3$　　$D$ 　$1, 2$　　$E$以上均不正确

【答案】$C$

【解析】


**【考点2】实数性质（△△）**

**（1）奇偶性**

【例1.5】已知 $m$ 为偶数，$n$ 为奇数，$x, y$ 为整数且满足方程组 $\begin{cases} x - 1998y = n \\ 9x + 13y = m \end{cases}$ 的解，那么（　　）。

$A$ 　$x, y$ 都是偶数　　$B$ 　$x, y$ 都是奇数　　$C$ 　$x$ 是偶数，$y$ 是奇数

$D$ 　$x$ 是奇数，$y$ 是偶数　　$E$以上均不正确

【答案】$B$

【解析】


**（2）质数合数**

**【思路】1、条件中说明 30 以内的质数，一般使用枚举法；2、条件中对质数不加说明，一般考察质数的定义。**

【例1.6】若方程 $x^2 - px + q = 0$ 有整数解，且 $p, q$ 为质数，则以 $p, q+2, p+q$ 为边长的三角形为（　　）三角形。

$A$ 　等边　　　$B$ 　直角　　　$C$ 　等腰但不等边　　　$D$ 　等腰直角　　　$E$ 　无法确定

【答案】$B$

【解析】

**（3）整数的除法**

【例 1.7】同余问题口诀："除数最小公倍数为周期，余同取余，和同加和，差同减差"

余同取余："一个数除以 4 余 1，除以 5 余 1，除以 6 余 1"，这个数可表示为_____；

差同减差："一个数除以 4 余 3，除以 5 余 4，除以 6 余 5"，这个数可表示为_____；

和同加和："一个数除以 4 余 3，除以 5 余 2，除以 6 余 1"，这个数可表示为_____。


**【考点 3】绝对值性质的考察（△△△）**

**（1）意义**

【例 1.8】方程 $\left|1-\left|x\right|\right| + \sqrt{\left|x\right|-2} = x$ 的根的个数为（　　　）。

$A$　0　　　$B$　1　　　$C$　2　　　$D$　3　　　$E$　4

【答案】$B$

【解析】


【例 1.9】（2017.12）已知 $a,b,c$ 为三个实数，则 $\min\{|a-b|,|b-c|,|c-a|\} \leq 5$

（1）$|a| \leq 5, |b| \leq 5, |b| \leq 5$　（2）$a+b+c=15$

【答案】$A$

【解析】


**（2）非负性**

【例 1.10】$|2a-4| + |b+2| + \sqrt{(a-3)b^2} + 4 = 2a$，则 $a+b=$（　　　）。

$A$　1　　　$B$　2　　　$C$　3　　　$D$　4　　　$E$　5

【答案】$A$

【解析】


**（2）三角不等式**

**【思路】** 一遇到绝对值问题的最值和范围，马上考虑绝对值得三角不等式。

【例 1.11】已知实数 $x, y$ 则 $|x-2y+3|$ 最大值为 3

（1）$|x-1| \le 1$，$|y-1| \le 1$　　（2）$|x+1| \le 1$，$|y-1| \le 1$

【答案】$B$

【解析】

【例 1.12】已知 $x_1, x_2, x_3$ 都是实数，$\bar{x}$ 为 $x_1, x_2, x_3$ 的平均数，则 $|x_k - \bar{x}| \le 1, k = 1, 2, 3$

（1）$|x_k| \le 1, k = 1, 2, 3$　　　　（2）$x_1 = 0$

【答案】$C$

【解析】

## 【考点 4】比和比例问题（△）

【例 1.13】$\dfrac{y+z}{x} = 2$

（1）$\dfrac{y+z}{x} = \dfrac{z+x}{y}$　　　　（2）$\dfrac{z+x}{y} = \dfrac{x+y}{z}$

【答案】$E$

【解析】

## 【考点 5】均值定理的考察（△△△）

【例 1.14】已知实数 $a, b$，则可以确定 $\dfrac{1}{a^2} + \dfrac{1}{b^2}$ 的最小值

（1）$ab = 1$　　　　（2）$a^2 + b^2 = 1$

【答案】$D$

【解析】

【例 1.15】（2016.12）设 $x, y$ 是实数，则可以确定 $x^3 + y^3$ 的最小值

（1）$xy = 1$　　　　（2）$x + y = 2$

【答案】$B$

【解析】

【例 1.16】$abcde$ 的最小值为 256

（1）$a,b,c,d,e$ 是大于 1 的自然数，且 $a+b+c+d+e=24$

（2）$a,b,c,d,e$ 是大于 1 的自然数，且 $a+b+c+d+e=23$

【答案】$A$

【解析】

# 第二节 整式和分式

一、考点归纳

**1、乘法公式及因式分解（△△）**

（1）乘法公式：3 对

（2）1 提 2 套 3 十字 4 分组。

**2、多项式的除法运算（△△△）**

余数定理、待定系数法、竖式除法。

**3、分式计算（△）**

二、考点预测

**【考点 1】乘法公式及因式分解（△）**

**（1） 乘法公式**

【例 2.1】$4x^4 + mx^3 + nx^2 - 2x + 1$ 是完全平方式，则 $m, n = $（    ）。

$A$  $4, -3$      $B$  $4, 5$      $C$  $-4, 5$或$4, -3$      $D$  $-4, -5$或$4, 3$      $E$  以上均不正确

【答案】$C$

【解析】

**（2） 因式分解**

【例 2.2】（2018）设 $m, n$ 为正整数，则能确定 $m + n$ 的值

（1）已知 $\dfrac{1}{m} + \dfrac{3}{n} = 1$     （2）$\dfrac{1}{m} + \dfrac{2}{n} = 1$

【答案】$D$

【解析】

**【考点 2】多项式（△△）**

(1)多项式系数

【例 2.3】已知 $x(1 - kx)^3 = a_1 x + a_2 x^2 + a_3 x^3 + a_4 x^4$ 对所有实数 $x$ 成立，则

$a_1 + a_2 + a_3 + a_4 = -8$

（1）$a_2 = -9$   （2）$a_3 = 27$

【答案】$A$

【解析】

**(2)多项式除法运算**

【例2.4】（2010.1）多项式 $x^3 + ax^2 + bx - 6$ 有两个因式 $x - 1$ 和 $x - 2$，则其第三个因式以及参数 $a, b$。

【解析】

## 【考点3】分式计算（△）
**【原则】先化简后代入求值**

【例2.5】已知 $4x - 3y - 6z = 0, x + 2y - 7z = 0$，则 $\dfrac{2x^2 + 3y^2 + 6z^2}{x^2 + 5y^2 + 7z^2} = ($ 　　 $)$。

$A$　1　　　$B$　2　　　$C$　$\dfrac{1}{2}$　　　$D$　$\dfrac{2}{3}$　　　$E$　3

【答案】$A$

【解析】

【例2.6】（2015.12）已知 $p, q$ 为非零实数，则能确定 $\dfrac{p}{q(p-1)}$ 的值

（1）　$p + q = 1$　　　　　　（2）$\dfrac{1}{p} + \dfrac{1}{q} = 1$

【答案】$B$

【解析】

# 第三节函数、方程、不等式

一、考点归纳

1、一元一次方程（△）$ax = b(a \neq 0)$，一般结合绝对值结合考察。

2、一元二次方程（△△△）

 （1）有实根

 （2）根的个数

 （1）韦达定理的应用

 （4）根的性质及范围

3、其他方程（分式、根式、指数、对数）（△）

注意对自变量的取值范围，由其他方程化成整式方程会产生增根，要验根。

4、一元二次不等式（△△△）

 （1）求解集：化为标准型，首项系数为正数

 （2）恒成立：$a > 0, \Delta < 0; a < 0, \Delta < 0$

5、分式、根式不等式（△）

  能确定分母正负性的，则两边同乘分母；不能确定分母正负性的，则移项通分

6、高次不等式（△）

  穿针引线，从右上方开始，奇穿偶不穿（次数）

二、考点预测

【考点1】不等式基本性质（△△△）

【例3.1】（2015.12）已知 $a, b$ 为实数，则 $a \geq 2$ 或 $b \geq 2$

（1）$a + b \geq 4$ 　　 （2）$ab \geq 4$

【答案】$A$

【解析】

【例3.2】（2018.12）设 $x, y$ 为实数，则 $|x + y| \leq 2$

 （1）$x^2 + y^2 \leq 2$ （2）$xy \leq 1$

【答案】$A$

【解析】

【例3.3】（2016.12）设 $x, y$ 是实数，则 $x \leq 6, y \leq 4$

（1）$x \leq y + 2$ （2）$2y \leq x + 2$

【答案】$C$

【解析】

**【考点 2】一元二次方程（△△）**

**（1） 有实根**

【例 3.4】关于 $x$ 方程 $x^2 - 4mx + 4m^2 + 2m + 3 = 0$ ，$x^2 + (2m+1)x + m^2 = 0$ 中至少有一个方程有实根，则 $m$ 的取值范围为（    ）。

$A$  $m \le -\dfrac{3}{2}$ 或 $m \ge -\dfrac{1}{4}$     $B$  $-\dfrac{3}{2} < m < \dfrac{1}{4}$     $C$  $-\dfrac{1}{4} < m < \dfrac{1}{2}$     $D$  $m \le -\dfrac{3}{2}$ 或 $m \ge \dfrac{1}{2}$

$E$  以上均不正确

【答案】$A$
【解析】

**（2） 根的个数**

【例 3.5】对于方程 $x^2 - 2|x| + 2 = m$ 的实数根为 3 个，则 $m$ 的取值为（    ）。

$A$  $1$     $B$  $2$     $C$  $\sqrt{3}$     $D$  $\dfrac{5}{2}$     $E$  $3$

【答案】$B$
【解析】

**（3） 韦达定理的应用**

【例 3.6】设 $x_1, x_2$ 是方程 $x^2 - 2(k+1)x + k^2 + 2 = 0$ 两个实数根，且 $(x_1 + 1)(x_2 + 1) = 8$ ，则 $k$ 的值为（    ）。

$A$  $1$     $B$  $2$     $C$  $-3$     $D$  $1$或$-3$     $E$  $1$或$2$

【答案】$A$
【解析】

【例 3.7】方程 $x^2 + x - 3 = 0$ 的根为 $x_1, x_2$ ，则 $x_1^3 - 4x_2^2 + 19$ 的值为（    ）。

$A$  $6$     $B$  $4$     $C$  $2$     $D$  $1$     $E$  $0$

【答案】$E$

【解析】

【例 3.8】方程 $4x^2 - 4(m-1)x + m^2 = 7$ 两个实数根之差的绝对值大于 2

（1）$1 < m < 2$　（2）$-3 < m < -2$

【答案】$D$

【解析】

### （4）根的性质

【例 3.9】$k < 1$

（1）$x^2 - x + k(1-k) = 0$ 有两个不等的正根

（2）$x^2 + (3k-1)x + k + 8 = 0$ 一根大于 1，一根小于 1

【答案】$D$

【解析】

### 【考点 3】其他方程（分式、根式、指数、对数）（△）

【例 3.10】关于 $x$ 的方程 $\dfrac{1}{x-2} + 3 = \dfrac{1-x}{2-x}$ 与 $\dfrac{x+1}{x-|a|} = 2 - \dfrac{3}{|a|-x}$ 有相同的增根

（1）$a = 2$　　（2）$a = -2$

【答案】$D$

【解析】

### 【考点 4】不等式（△）

【例 3.11】不等式 $(a^2 - 3a + 2)x^2 + (a-1)x + 2 > 0$ 的解为一切实数，则（　　　　）。

$A$　$a < 1$　　　$B$　$a \leq 1$ 或 $a \geq 2$　　　$C$　$a > \dfrac{15}{7}$　　　$D$　$a < 1$ 或 $a > \dfrac{15}{7}$　　　$E$　$a \leq 1$ 或 $a > \dfrac{15}{7}$

【答案】$E$

【解析】

## 【考点6】复合函数问题（△△△）

### （1） 复合函数问题

【例 3.12】（2018.12）设函数 $f(x) = x^2 + ax$，则 $f(x)$ 的最小值与 $f(f(x))$ 的最小值相等

（1）$a \geq 2$　　（2）$a \leq 0$

【答案】$D$

【解析】

### （2）分段函数问题

【例 3.13】（2017.12）函数 $f(x) = \max\{x^2, -x^2 + 8\}$ 的最小值为（　　）。

$A$　8　$B$　7　$C$　6　$D$　5　$E$　4

【答案】$E$

【解析】

## 第四节 数列

一、考点归纳

1、通项的递推公式（△）

2、$a_n$ 与 $S_n$ 的关系（△）

3、数列性质（△△△）
 （1）角标性质
 （2）中项性质
 （3）前 $n$ 项和的性质

4、等差数列的最值（△△）

5、数列的应用（△△）

二、考点预测

【考点1】递推公式（△）

【例 4.1】已知数列 $\{a_n\}$ 的首项 $a_1 = 1, a_{n+1} = 3a_n + 5$ ，则 $a_n = ($      $) = $ 。

【解析】

【例 4.2】数列 $\{a_n\}$ 的首项 $a_1 = -1, a_{n+1} = a_n^2 - 3$ ，$|a_k| + |a_{k+1}| = 3$

（1） $k = 2019$ （2） $k = 2020$

【答案】$D$

【解析】

【考点2】$a_n$ 与 $S_n$ 的关系（△△）

（1）  已知 $S_n$ ，求 $a_n$

【例 4.3】数列 $\{a_n\}$ 的前前 $n$ 项和为 $S_n$ ，$a_1 = 1, a_{n+1} = 2S_n$ ，则下列正确是（       ）。

$A$   $a_3 = 2$      $B$   $a_4 = 4$      $C$   $a_5 = 18$      $D$   $a_5 = 54$      $E$   $a_6 = 81$

【答案】$D$

【解析】

（2）　已知 $a_n$，求 $S_n$

【例 4.4】等差数列 $\{a_n\}$ 中，$a_1 = 5$，　$d = 3$，将 $\{a_n\}$ 中的第 2 项，第 4 项，……，第 $2^n$

项按原来的顺序排成一个新数列，则这个新数列的前 9 项和为（　　　）。

$A$　　$3 \times 2^9 + 12$　　　　　　$B$　　$3 \times 2^{11} + 12$　　　　　　$C$　　$3 \times 2^{10} + 6$　　　　　　$D$　　$3 \times 2^{10} + 12$

$E$　　$3 \times 2^9 + 6$

【答案】$D$

【解析】

**【考点 3】数列的性质（△△△）**

【例 4.5】数列 $\{a_n\}$ 是公差为正的等差数列，且 $a_1 + a_2 + a_3 = 15, a_1 a_2 a_3 = 80$，则

$a_{11} + a_{12} + a_{13} = $（　）。

$A$　　120　　　　　　$B$　　105　　　　　　$C$　　90　　　　　　$D$　　75　　　　　　$E$　　95

【答案】$B$

【解析】

【例 4.6】25 位老人，他们的年龄为连续的自然数，且年龄和为 2000 岁，则最大的老人（　　　）岁。

$A$　　90　　　　　　$B$　　91　　　　　　$C$　　92　　　　　　$D$　　93　　　　　　$E$　　94

【答案】$B$

【解析】

**【考点 4】数列中的最值（△△）**

【思路点拨】对于等差数列，可以借助于 $a_n$ 变号发生的点，找到最值，或者通过 $S_n$ 的表达式分析；对于等比数列，只要借助于指数函数的单调性分析。

【例 4.7】（2015.12）已知 $\{a_n\}$ 是公差大于零的等差数列，$S_n$ 是 $\{a_n\}$ 前 $n$ 项和，则

$S_n \geq S_{10}, n = 1, 2, \cdots$

（1）$a_{10} = 0$　　　　（2）$a_{11}a_{10} < 0$

【答案】$D$

【解析】

【例 4.8】数列 $\{a_n\}$ 是首项为 23，公差为整数的等差数列，且第六项为正，第七项为负，则

（1）$S_n$ 的最大值为（　　　　）；

$A$　68　　　　$B$　78　　　　$C$　84　　　　$D$　92　　　　$E$　76

（2）当 $S_n > 0$ 时，则 $n$ 的最大值为
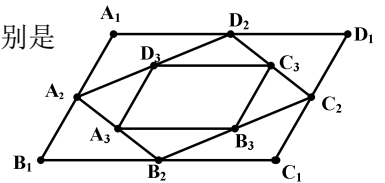
$A$　15　　　　$B$　16　　　　$C$　14　　　　$D$　12　　　　$E$　10

【答案】$B,D$

【解析】

【考点 5】数列的应用（△△）

【例 4.9】如图，四边形 $A_1B_1C_1D_1$ 是平四边形，$A_2,B_2,C_2,D_2$ 分别是

$A_1B_1C_1D_1$ 的四边中点，$A_3,B_3,C_3,D_3$ 分别是 $A_2B_2C_2D_2$ 的四边

中点，依次下去，得到四边形序列 $A_nB_nC_nD_n(n = 1,2,3\cdots)$。设 $A_nB_nC_nD_n$

的面积为 $S_n$，且 $S_1 = 12$，则 $S_1 + S_2 + S_3 + \cdots$

$A$　16　$B$　20　$C$　24　$D$　28　$E$　30

【答案】$C$

【解析】

【例 4.10】某校为扩大教学规模，从今年起扩大招生，现有学生人数为 $b$ 人，以后学生人数年增长率为 0.49%。该校今年年初有旧设备 $a$ 套，学校决定每年以当年年初设备数量的 10% 增长率增加新设备，同时每年换掉 $x$ 套的旧设备，如果 10 年后该校学生的人均占有设备的比率正好比目前翻一番，那么每年应更换的旧设备是（　）套。

（$1.1^9 = 2.38, 1.1^{10} = 2.60, 1.1^{11} = 2.85, (1 + 0.49)^{10} = 1.05$ ）

$A$    $\dfrac{1}{20}a$        $B$    $\dfrac{1}{28}a$        $C$    $\dfrac{1}{32}a$        $D$    $\dfrac{1}{40}a$

$E$    以上均不正确

【答案】$C$

【解析】

# 第五节 应用题

## 一、考点归纳
### 1、四大必考题型
（1）比例问题：比例化简、统一比例法、见比设"$k$"、比例定理，统一不变量

（2）增长率问题：变化率=$\dfrac{变化量}{变化前}\times 100\%$，$a(1\pm x)^n=b$

（3）利润（率）问题：利润=售价-进价，利润率=$\dfrac{利润}{进货价}\times 100\%$

（4）浓度问题：浓度=$\dfrac{溶质}{溶液}\times 100\%=\dfrac{溶质}{溶剂+溶质}\times 100\%$

### 2、七大常考题型
（1）路程问题
（2）工程问题
（3）不定方程（不等式）
（4）分段计费
（5）线性规划
（6）最值问题
（7）至多至少问题
（8）集合问题

**【考点1】：四大必考题型**
**（1）比例问题**
【例5.1】（2018.12）学科竞赛设一等奖、二等奖、三等奖。比例为1:3:8，获奖率为30%，已知10人获一等奖，则参加竞赛的人数为（　　　　）。

$A$　300　$B$　400　$C$　500　$D$　550　$E$　600

【答案】$B$
【解析】

【例5.2】某公司共有甲乙两个部门，如果从甲部门调10人到乙部门，那么乙部门的人数是甲部门的2倍；如果把乙部门的$\dfrac{1}{5}$调到甲部门，那么两个部门的人数相等，该公司的总人数为（　　）。

*A* 150            *B* 180            *C* 200            *D* 240            *E* 250

【答案】*D*

【解析】

【例 5.3】北京残奥会某国的男女运动员人数之比为 19：12，后增加了若干女运动员，使人数之比为 20:13，又增加了男运动员，使人数之比为 30：19，如果后增加的男运动员比先增加的女运动员多 3 人，则最后的运动员人数为（    ）人。

*A* 686            *B* 637            *C* 700            *D* 661            *E* 600

【答案】*B*

【解析】

**（2）增长率问题**

【例 5.4】（2017.12）某品牌的电冰箱连续两次降价 10%后的售价是降价前的（ ）。

*A* 80%            *B* 81%            *C* 82%            *D* 83%            *E* 85%

【答案】*B*

【解析】

【例 5.5】（2015.12）某新兴产业在 2005 年末至 2009 年末产值的年平均增长率为 $q$，在 2009 年末至 2013 年末产值的年平均增长率比前面下降了 40%，2013 年末产值约为 2005 年产值的 14.46 倍（$\approx 1.95^4$），则 $q$ 为（      ）。

*A* 30%            *B* 35%            *C* 40%            *D* 45%            *E* 50%

【答案】*E*

【解析】

**（3）利润问题**

【例 5.6】某商品每件成本 72 元，原来按定价出售，每天可售出 100 件，每件利润为成本的 25%，后来按定价的 90%出售，每天销售量提高到原来的 2.5 倍，照这样计算，每天的利润比原来增加（    ）元。

*A* 480            *B* 440            *C* 450            *D* 490            *E* 520

【答案】*C*

【解析】


**（4）浓度问题**

【例 5.7】（2014.12）某容器中装满了浓度为 90% 的酒精，倒出 1 升后用水后又倒出 1 升，再用水将容器注满，已知此时的酒精浓度为 40%，则该容器的容积是（ 　　 ）升。

$A$　2.5　　　　　$B$　3　　　　　$C$　3.5　　　　　$D$　4　　　　　$E$　4.5

【答案】$B$

【解析】


【例 5.8】甲杯中有纯酒精 12 克，乙杯中有水 15 克，第一次将甲杯中的部分酒精倒入乙杯，混合后，第二次将乙杯中的部分倒入甲杯，此时甲杯中酒精含量为 50%，乙杯中的酒精含量为 25%，则第二次从乙杯中倒出（ 　　 ）升。

$A$　13　　　　　$B$　14　　　　　$C$　15　　　　　$D$　16　　　　　$E$　11

【答案】$B$

【解析】


【例 5.9】（2016.12）将 2 升甲酒精和 1 升乙酒精混合得到丙酒精，能确定甲乙两种酒精的浓度

（1）1 升甲酒精和 5 升乙酒精混合后的浓度是丙酒精浓度的 $\dfrac{1}{2}$ 倍

（2）1 升甲酒精和 2 升乙酒精混合后的浓度是丙酒精浓度的 $\dfrac{2}{3}$ 倍

【答案】$E$

【解析】


**【考点 2】八大常考题型**
**（1）行程问题（△△△）**

【例 5.10】小王从宿舍到教学楼上课，如果速度降低 10%，则会迟到 1 分钟；如果正常行走 180 米后再把速度提高 20%，则会提前 1 分钟到达，那么从宿舍到教学楼的距离是（ 　 ）米。

$A$　360　　　　　$B$　480　　　　　$C$　540　　　　　$D$　600　　　　　$E$　720

【答案】$D$

【解析】


【例 5.11】甲乙两人从 400 米的环形跑道的一点 $A$，背向同时出发，8 分钟后两人第三次相遇，已知甲每秒比乙每秒多走 0.1 米，那么两人第三次相遇时，与 $A$ 点沿跑道上的点最短距离为（　　）米。

$A$　166　　　　　　　$B$　176　　　　　　$C$　224　　　　　　$D$　234　　　　　　$E$　236

【答案】$B$

【解析】


【例 5.12】一艘小轮船上午 8：00 起航逆流而上（设船速和水流速度一定），中途船上一块木板落入水中，直到 8：50 船员才发现这块重要的木板丢失，立即调转船头去追，最终于 9：20 追上木板。由上述数据可以算出木板落水的时间是（　　）。

$A$　8:35　　　$B$　8:30　　　$C$　8:25　　　$D$　8:20　　　$E$　8:15

【答案】$D$

【解析】


**（2）工程问题（△△△）**

【例 5.13】某项工程，小王单独做需要 20 天完成，小张单独做需要 30 天完成。现两人合作，但中间小王休息了 4 天，小张也休息了若干天，最后该工程用了 16 天完成，则小张休息了（　　）天。

$A$　4　　　　　　　$B$　4.5　　　　　　$C$　5　　　　　　$D$　5.5　　　　　　$E$　6

【答案】$A$

【解析】


【例 5.14】一件工作，甲、乙合做需 4 小时完成，乙、丙合做需 5 小时完成。现在甲、丙先合做 2 小时后，余下的乙还需做 6 小时完成，则乙单独做完这件工作要（　　）小时。

$A$　15　　　　　　　$B$　20　　　　　　$C$　25　　　　　　$D$　30　　　　　　$E$　35

【答案】$B$

【解析】


【例 5.15】一件工作，甲乙合作需要 2 天，人工费 2900 元，乙丙两个人合作需要 4 天，

人工费 2600 元，甲丙合作 2 天完成全部工作量的 $\frac{5}{6}$，人工费 2400 元，则甲单独完成这件工作需要的时间与人工费为（　　　）。

*A*　3天,3000元　　　　*B*　3天，2580元　　　　*C*　4天,3000元　　　　*D*　4天，2580元

*E*　4天，2900元

【答案】*A*

【解析】

## （3）分段函数问题（△△）

【例 5.16】依法纳税是每个公民的义务。《中华人民共和国所得税法》规定，有收入的公民依照下表中规定的税率交纳个人所得税

| 级别 | 全月应纳税所得额 | 税率（%） | 有效值 |
| --- | --- | --- | --- |
| 1 | 不超过 500 元部分 | 5 | 25 |
| 2 | 超过 500 至 2000 元部分 | 10 | 150 |
| 3 | 超过 2000 至 5000 元部分 | 15 | |
| …. | …. | …. | |

1999 年规定，上表中的"全月应交纳所得税额"是从收入中减除 800 元后的余额。小王四季度交纳个人所得税 99 元，则小王每月收入（　　　）元。

*A*　2040　　　　*B*　1380　　　　*C*　1760　　　　*D*　1870　　　　*E*　2000

【答案】*B*

【解析】

## （4）不定方程题　（△△△）

【例 5．17】（2001.1）在年底的献爱心活动中，某单位共有 100 人参加捐款。经统计，捐款总额是 19000 元，个人捐款有 100 元、500 元、和 2000 元三种，该单位捐款 500 元的人数为（　　　）人。

*A*　13　　　*B*　18　　　*C*　25　　　*D*　30　　　*E*　38

【答案】*A*

【解析】

【例 5.18】某机构向 12 位教师征订题，共征集到 5 种题型的试题 52 道，则能确定供题教师的人数

（1）每位教师提供的试题数量相同　（2）每位教师提供的题型不超过 2 种

【答案】*C*

【解析】

**（5）线性规划（△△）**

【例5.19】（2010.12）某居民小区决定投资15万元修建停车位。据测算，修建一个室内车位的费用为5000元，修建一个室外车位的费用为1000元。考虑到实际因素，计划室外车位的数量不少于室内车位的2倍，也不多于室内车位的3倍，这笔投资最多可修建车位的数量为（　　）个。

*A*　78　　　*B*　74　　　*C*　72　　　*D*　70　　　*E*　66

【答案】*B*

【解析】

**（6）最值问题（△）**

【例5.20】某商场将每台进价为2000元的冰箱以2400元销售，每天销售8台，调研表明这种冰箱的售价每降低50元，每天就能多销售4台。若要每天销售利润最大，则该冰箱的定价应为（　　）元。

*A*　2200　　　　*B*　2250　　　　*C*　2300　　　　*D*　2350　　　　*E*　2400

【答案】*B*

【解析】

**（7）至多至少型问题（△）**

【例5.21】一次数学竞赛中，总共有5道题目，做对第一题的占总人数的80%，做对第二题的占总人数的95%，做对第三题的占总人数的85%，做对第四题的占总人数的79%，做对第五题的占总人数的74%，如果至少做对3题（包括3题）的算及格，那么这次数学竞赛的及格率至少是（　　）。

*A*　74%　　　　*B*　70%　　　　*C*　73%　　　　*D*　71%　　　　*E*　72%

【答案】*D*

【解析】

**（8）容斥原理（△）**

【例5.22】学校对100名学生进行调查，结果有58人喜欢看球赛，有38人喜欢看戏剧，有52人喜欢看电影。另外还知道，既喜欢看球赛又喜欢看戏剧（但不喜欢看电影）的有6人，既喜欢看电影又喜欢看戏剧（但不喜欢看球赛）的有4人，三种都喜欢的有12人，则有（　　）人只喜欢看电影。（假定每人至少喜欢一项）

*A*　16　　　　*B*　17　　　　*C*　18　　　　*D*　19　　　　*E*　22

【答案】*E*

【解析】

# 第六节 几何

一、考点归纳

1、三角形（△△△）

（1） 特殊三角形：直角三角形，等腰三角形，等边三角形

（2） 四心：内心，外心，重心，垂心

（3） 全等与相似（平行线）

1、四边形：梯形（△△）

2、求面积常用的方法技巧（△△△）

（1）多边形：同底同高；比例（相似）；翻转，平移

（2）圆，圆弧：割补；对称；

3、求线段的长度（△）

（1） 比例（相似）

（2）面积关系求长度

5、直线（必考）（△△△）

（1）恒过定点的直线：点斜式

（2）直线过象限：斜截式

（3）两直线的位置关系

（4）两平行线的距离

（5）三条直线的关系：无法构成三角形，交与一点，出现平行（二条，三条）

6、圆（△△△）

（1）直线与圆的三种位置关系：相交求弦长，相切，圆心到直线的距离（与圆相关的最值点一般在相切时取到）

（2）圆与圆5种位置关系：有交点

相交：注意2，3等圆过圆心，相交部分的弦长，覆盖的周长和面积

外切：外公切线的长度 $\sqrt{(r_1+r_2)^2-(r_1-r_2)^2}$ 。

7、对称情况：（△△）

（1）中心对称：中点坐标公式

（2）轴对称：特殊对称轴以及公式

8、 最值问题（借助于几何意义分析）（△△△）

二、考点预测

【考点1】图形的面积（△△△）

【思路点拨】规则图形利用公式、比例传递求解；不规则图形割补法等求解。

【例6.1】如图，在四边形 $ABCD$ 中，$AB/\!/CD$，$AB$ 与 $CD$ 的边长分别为4和8。若 $\Delta ABE$ 的面积为4，则四边形 $ABCD$ 的面
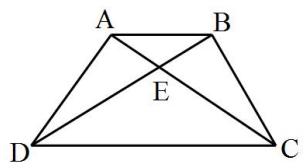
积为（　　）。

$A$　24　　　　　$B$　30　　　　　$C$　32　　　　　$D$　36　　　　　$E$　40　　　　【答案】$D$
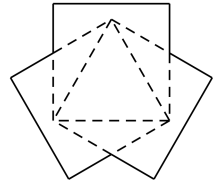
【解析】

【例 6.2】如图所示，三个边长为 1 的正方形所组成的区域的面积为（　　）。

$A$　$3-\sqrt{2}$　　　　$B$　$3-\dfrac{3\sqrt{2}}{4}$　　　　$C$　$3-\sqrt{3}$　　　　$D$　$3-\dfrac{\sqrt{3}}{2}$　　　$E$　$3-\dfrac{3\sqrt{3}}{4}$
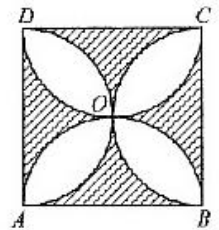
【答案】$E$

【解析】



【例 6.3】如图所示，四边形 $ABCD$ 是边长为 1 的正方形，弧 $AOB, BOC, COD, DOA$ 均

为半圆，则阴影部分的面积为（　　）。

$A$　$\dfrac{1}{2}$　　　$B$　$\dfrac{\pi}{2}$　　　$C$　$1-\dfrac{\pi}{4}$　　　$D$　$\dfrac{\pi}{2}-1$　　　$E$　$2-\dfrac{\pi}{2}$

【答案】$E$

【解析】



**【考点 2】长度（△）**

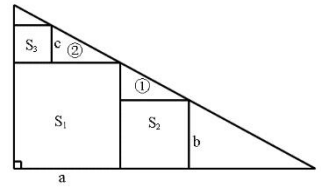【例 6.4】圆 $O$ 是三角形 $ABC$ 的内切圆，若三角形 $ABC$ 的面积与周长的大小之比为 $1:2$，，
则圆 $O$ 的面积为（　　）。

$A$　$\pi$　$B$　$2\pi$　$C$　$3\pi$　$D$　$4\pi$　$E$　$5\pi$

【答案】$A$

【解析】

【例 6.5】如图所示，$\Delta ABC$ 是直角三角形，$S_1$，$S_2$，$S_3$ 为正方形。已知 $a, b, c$ 为

$S_1$，$S_2$，$S_3$ 的边长，则（　　）。

$A \quad a = b + c$ $\qquad B \quad a^2 = b^2 + c^2$ $\qquad C \quad a^2 = 2b^2 + 2c^2$

$D \quad a^3 = b^3 + c^3$ $\qquad E \quad a^3 = 2b^3 + 2c^3$

【答案】$A$

【解析】

【考点3】三角形（△△）

【例6.6】若不等式组 $\begin{cases} x - y + 5 \geq 0 \\ y \geq a \\ 0 \leq x \leq 2 \end{cases}$ 表示的平面区域是一个三角形，则 $a$ 的取值范围是

（　　　　）。

$A \quad a < 5$ $\qquad B \quad a \geq 7$ $\qquad C \quad 5 \leq a < 7$ $\qquad D \quad a < 5$ 或 $a \geq 7$ $\qquad E \quad 5 < a < 7$

【答案】$C$

【解析】

【例6.7】已知直角 $\triangle ABC$ 中 $\angle C = 90^0, AC = 8, BC = 6$，则该三角形的外心与内心之间的距离为（　　　　）。

$A \quad 1$ $\qquad B \quad 2$ $\qquad C \quad \sqrt{2}$ $\qquad D \quad \sqrt{3}$ $\qquad E \quad \sqrt{5}$

【答案】$E$

【解析】

【考点5】直线与圆的方程（△△△）

【例6.8】圆 $(x-1)^2 + (y-2)^2 = 4$ 和直线 $(1+2\lambda)x + (1-\lambda)y - 3 - 3\lambda = 0$ 相交于两点。

（1）$\lambda = \dfrac{2\sqrt{3}}{5}$ $\qquad$ （2）$\lambda = \dfrac{5\sqrt{3}}{2}$

【答案】$D$

【解析】

【例 6.9】与直线 $x+y-2=0$ 和曲线 $x^2+y^2-12x-12y+54=0$ 都相切的半径最小的圆必经过（　　）。

$A$　(2,3)　　　　　$B$　(2,4)　　　　　$C$　(3,3)　　　　　$D$　(3,4)　　　　　$E$　(4,3)

【答案】$C$

【解析】

【考点 6】曲线的位置（△△△）

【例 6.10】若直线 $ax+by+c=0$ 过第一、二、三象限，则（　　）。

$A$　$ab>0,bc>0$　　　　　$B$　$ab>0,bc<0$　　　　　$C$　$ab<0,bc>0$

$D$　$ab<0,bc<0$　　　　　$E$　以上均不正确

【答案】$D$

【解析】

【例 6.11】由直线 $y=x+1$ 上的一点向圆 $(x-3)^2+y^2=1$ 引切线，则切线长的最小值为（　　）。

$A$　1　　　　　$B$　$2\sqrt{2}$　　　　　$C$　$\sqrt{7}$　　　　　$D$　3　　　　　$E$　4

【答案】$C$

【解析】

【考点 7】范围与最值（△△）

【例 6.12】设点 $A(0,2)$ 和点 $B(1,0)$，在线段 $AB$ 上取一点 $M(x,y)(0<x<1)$，则以 $x,y$ 为两边的矩形面积的最大值为（　　）。

$A$　$\dfrac{5}{8}$　　　　　$B$　$\dfrac{1}{2}$　　　　　$C$　$\dfrac{3}{8}$　　　　　$D$　$\dfrac{1}{4}$　　　　　$E$　$\dfrac{1}{8}$

【答案】$B$

【解析】

【例 6.13】已知点 $P(x, y)$ 满足 $\begin{cases} x - y + 2 \leq 0 \\ x \geq 1 \\ x + y - 7 \leq 0 \end{cases}$，则 $\dfrac{y}{x}$ 的取值范围为（        ）；

$A \quad [\dfrac{9}{5}, 6]$ $\qquad$ $B \quad (-\infty, \dfrac{9}{5}] \cup [6, +\infty)$ $\qquad$ $C \quad (-\infty, 3] \cup [6, +\infty)$ $\qquad$ $D \quad [3, 6]$

$E \quad [2, 6]$

【答案】$A$

【解析】

## 第七节 排列组合、概率

### 一、 考点归纳

1、两个原理（△△）

2、三分问题（△△△）

（1）分组问题：组不加区分，注意消序；

（2）分配问题：先分后配；

（3）分房问题：人房分清。

元素分给对象

$$
元素\begin{cases}
相同\begin{cases}
对象相同：按数量列举 \\
对象不相同：隔板法\begin{cases}非空\\允许空\end{cases}
\end{cases} \\
不同\begin{cases}
对象相同：分组 \\
对象不相同：\begin{cases}非空：分配\\允许空：分房\end{cases}
\end{cases}
\end{cases}
$$
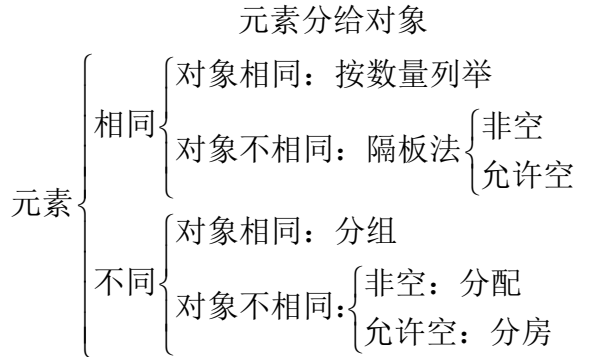
| 6 个元素 | 4 个盒子 | 盒子非空 | 盒子可以空 |
|---|---|---|---|
| 相同 | 相同 | 枚举：2 种 | 分类、枚举：9 种 |
| 相同 | 不同 | 隔板法：$C_{6-1}^{4-1}$ | 隔板法：$C_{6+4-1}^{4-1}$ |
| 不同 | 相同 | 分组：$C_6^3 + \dfrac{C_6^2 C_4^2 C_2^1 C_1^1}{2!2!}$ | 分类、分组 |
| 不同 | 不同 | 分组分配：$(C_6^3 + \dfrac{C_6^2 C_4^2 C_2^1 C_1^1}{2!2!}) \times 4!$ | 分房模型：$4^6$ |

3、隔板法（△）

掌握不允许空、允许空的两个公式即可：$C_{n-1}^{m-1}$ 与 $C_{n+m-1}^{m-1}$。

4、相邻与不相邻（△△△）

（1）相邻打包，注意包内排序；

（2）不相邻插空，特殊情况：交错排列；

（3）同时出现先打包后插空。

5、全能元素问题（△△）

按模版中角色较少的元素进行分类讨论。

6、对号与不对号入座问题（△）

掌握结论即可，注意全部不对号和部分不对号的区别。

7、涂色和配对问题（了解）

8、古典概型：取样（必考）（△△△）

（1）试密码，钥匙

（2）有终止条件：直到第几次，刚好

（3）数字问题：奇偶、整除。

**9、独立事件（概率的乘法）（△△△）**

（1）已知每个对象的概率，求概率：至少，至多，恰有

（2）贝奴里公式（独立事件的特殊情况）

（二选一）

## 二、考点预测

**【考点1】两个原理（△△）**

【例 7.1】现有豪华游 5 种和普通游 4 种，某单位从中选择 4 种，则不同的选法有 120 种

（1）含有豪华游 （2）含有普通游

【答案】$C$

【解析】

【例 7.2】从 1，3，5，7 中取 2 个，从 0，2，4，6，8 中取 2 个，组成无重复的四位数能被 5 整除的个数（ ）。

$A$ 300 $B$ 282 $C$ 280 $D$ 262 $E$ 260

【答案】$A$

【解析】

【例 7.3】如图，一只蚂蚁要从点 $A$ 出发沿着线段爬到点 $B$，要求任何点和线段不可重复经过，则这只蚂蚁不同的走法有（ ）种。

$A$ 4 $B$ 6 $C$ 9 $D$ 12 $E$ 15

【答案】$C$

【解析】

**【考点2】三分问题（△△△）**

【例 7.4】6 名学生，

（1）分到 2 个宿舍中，每个宿舍至少安排 2 人，则不同的分法有多少种。

（2）分到 5 个宿舍中，则恰有一个空宿舍的分法有多少种？
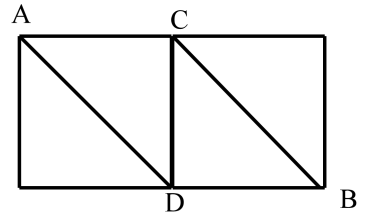
（3）分到 5 个宿舍中，则恰有一个空宿舍的概率？

【解析】

**【考点3】隔板法（△）**

**【常见形式】**名额分配，方程的正（非负）整数解，台阶问题

【例 7.5】今年是 2012 年，四位数 2012 的数字和 5，那么，像这样数字和是 5 的四位数一共有（　　）个。

$A$　34　　　$B$　35　　　$C$　40　　　$D$　56　　　$E$　60

【答案】$B$

【解析】

**【考点4】相邻与不相邻（△△△）**

【例 7.6】在原有 5 个节目单上，新增加 3 个节目，则 3 个新节目不相邻的插法（　　）种。

$A$　60　　　$B$　120　　　$C$　140　　　$D$　156　　　$E$　160

【答案】$B$

【解析】

【例 7.7】8 人站成一排，4 男 4 女，其中恰有 3 名男生相邻的方法数有（　）种。

$A$　1720　　　$B$　12400　　　$C$　12080　　　$D$　11980　　　$E$　11520

【答案】$E$

【解析】

【例 7.8】5 人排成一排，不同排法有 36 种。

（1）甲乙不相邻　　　　　　（2）甲丙不相邻

【答案】$C$

【解析】

**【考点5】全能元素（△△）**

【模板】有 $a$ 个人只会 $A$，有 $b$ 个人只会 $B$，有 $k$ 个人都会。从中选 $x+y$ 个人，其中 $x$ 个

人会 $A$，有 $y$ 个人会 $B$

【思路点拨 】$k, x, y$ 哪个比较小，用谁分类讨论

【例 7.9】9 人组成篮球队，其中 7 人善于打前锋，3 人善于打后卫，现从中选 5 人（三锋两卫，且前锋分左中右，后卫分左右）组队，则有（    ）种不同的组队方法。

$A$  600        $B$  660        $C$  720        $D$  780        $E$  900

【答案】$E$
【解析】

【考点 6】古典概型（△△△）
【思路点拨】取样方式：两大类三小类
逐次取：有放回（样本不变，贝努力）、无放回样本减少，（尝试问题）
一次取：逐次无放回取样的概率转化为一次性取样。
（1）取球，与球的颜色，编号有关
【例 7.10】已知甲盒中有大小相同的 3 个红球和 4 个黑球，乙盒中有大小相同的 5 个红球和 4 个黑球，现从甲乙盒中各任取 2 个，则取出的 4 个球中恰有 1 个红球的概率（    ）。

$A$  $\dfrac{31}{126}$        $B$  $\dfrac{39}{126}$        $C$  $\dfrac{37}{126}$        $D$  $\dfrac{16}{63}$        $E$  $\dfrac{17}{63}$

【答案】$D$
【解析】

（2）掷硬币，多涉及到正反面（注意终止条件）
【例 7.11】（2014.1）掷一枚硬币若干次，当正面向上的次数大于反面向上次数时停止，则 4 次之内停止的概率（    ）。

$A$  $\dfrac{1}{8}$        $B$  $\dfrac{3}{8}$        $C$  $\dfrac{5}{8}$        $D$  $\dfrac{3}{16}$        $E$  $\dfrac{5}{16}$

【答案】$C$
【解析】

（3）掷骰子，涉及到点数，坐标，系数等
【例 7.12】一枚筛子连续抛掷三次，它落地时向上的点数依次成等差数列的概率为（    ）。

$A$  $\dfrac{1}{9}$        $B$  $\dfrac{1}{12}$        $C$  $\dfrac{1}{15}$        $D$  $\dfrac{1}{18}$        $E$  $\dfrac{1}{14}$

【答案】$B$

【解析】

## （4）数字有关问题

【例 7.134】三位数恰有两位数字相同的概率为 $\dfrac{3}{16}$

（1）有小于 10 的质数组成的可重复数字的三位数

（2）有小于 10 的合数组成的可重复数字的三位数

【答案】$E$

【解析】

## （5）抽签模型

【例 7.14】信封中装有 10 张奖券，只有一张有奖，从信封中同时抽取 2 张，中奖概率为 $P$；

从信封中每次抽取 1 张奖券后放回，如此重复抽取 $n$ 次，中奖概率为 $Q$，则 $P < Q$

（1）$n = 2$              （2）$n = 3$

【答案】$B$

【解析】

## 【考点 7】独立事件（△△△）

【例 7.15】小王每次射击命中率为 $\dfrac{2}{3}$，他连续射击 4 次，每次命中与否相互独立，则其中

恰好有两次连续命中的概率为（        ）。

$A\ \ \dfrac{4}{27}$        $B\ \ \dfrac{16}{81}$        $C\ \ \dfrac{8}{27}$        $D\ \ \dfrac{1}{3}$        $E\ \ \dfrac{28}{81}$

【答案】$E$

【解析】

【例 7.16】2 个白球和 3 个黑球随机放入甲乙丙三个盒子中，则丙盒子中至少有 1 个白球和 1 个黑球的概率为（   ）。

$A\ \ \dfrac{95}{243}$        $B\ \ \dfrac{5}{9}$        $C\ \ \dfrac{19}{27}$        $D\ \ \dfrac{5}{18}$        $E\ \ \dfrac{2}{3}$

【答案】$A$

【解析】

**【考点8】伯努利概型（△△）**

**【例 7.17】** 甲乙两人试跳 2 米高度成功的概率为 0.7 和 0.6，且每次试跳与否相互独立，则（1）甲试跳 3 次，第三次才成功的概率？

（2）甲乙在第一次试跳中，至少有一人成功的概率？

（3）甲乙各试跳 2 次，甲比乙成功次数恰好多一次的概率？

**【解析】**

**【例 7.18】** 某运动员在练习跨栏项目，其每次跨栏成功率为 $\frac{1}{3}$，共跨栏 6 次，则成功的概率为 $\frac{32}{243}$

（1）在跨栏过程中，恰成功 3 次（2）第二次跨栏成功发生在第五次跨栏

**【答案】** $B$

**【解析】**

**【例 7.19】** 机器逐个生产产品，每生产一个产品立即检验，一旦发现两个次品立即停机检修。已知生产一个正品的概率为 0.8，则生产 5 个产品停机检修的概率？

**【解析】**

**【考点8】均值、方差**

**【例 7.20】** 数据 $2, 3, 4, 5, 6$ 的方差为 $k_1$，数据 $7, 9, 11, 13, 15$ 的方差为 $k_2$，则 $\frac{k_2}{k_1} = ($ 　　　$)$。

$A$ 1　　　$B$ 2　　　$C$ 3　　　$D$ 4　　　$E$ 5

**【答案】** $D$

**【解析】**

**【7.21】** 两组数据 $S_1 : 3, 4, 5, 6, 7$ 和 $S_2 : 4, 5, 6, 7, a$，则能确定 $a$ 的值

（1）$S_1$ 与 $S_2$ 的均值相等（2）$S_1$ 与 $S_2$ 的方差相等

**【答案】** $A$

**【解析】**

# 第二章 固定思维模式

## 第一节 算术与代数篇

**【模式 1】一遇到变量符号，马上取特值判断。**

【例】（2001.01）已知 $|a|=5$，$|b|=7, ab<0$，则 $|a\text{-}b|=$（    ）。

$A$    2         $B$    2         $C$    12         $D$    12

【答案】$C$

【解析】取 $a=5, b=7$。

**【模式 2】一遇到选择变量取值范围，马上特值排除法。**

【例】（2008.10）若 $y^2-2(\sqrt{x}+\dfrac{1}{\sqrt{x}})y+3<0$ 对一切整实数 $x$ 恒成立，则 $y$ 的取值范围（    ）。

$A$    (1,3)         $B$    (2,4)         $C$    (1,4)         $D$    (3,5)         $E$    (3,4)

【答案】$A$

【解析】取 $x=1$ 时。

**【模式 3】一遇到多项式除法，马上令除式为零。**

【例】确定 $m,b$ 的值为（    ），使 $mx^4+bx^3+1$ 能被 $(x-1)^2$ 整除。

$A$    1,4         $B$    3,–4         $C$    –3,4         $D$    1,–3         $E$    0,1

【答案】$B$

【解析】取 $x=1$。

【例】设 $f(x)$ 为实系数多项式，以 $x-1$ 除之，余数为 9；以 $x-2$ 除之，余数为 16，则 $f(x)$ 除以 $(x-1)(x-2)$ 的余式为（    ）。

$A$    $7x+2$         $B$    $7x+3$         $C$    $7x+4$         $D$    $7x+5$         $E$    $2x+7$

【答案】$A$

【解析】直接将 $f(1)=9, f(2)=16$ 代入选项排除。

**【模式 4】一遇到表达式中含绝对值、偶次方、偶次根号，马上找 0。**

【例】（2009.10）$2^{x+y} + 2^{a+b} = 17$

（1）$a, b, x, y$ 满足 $y + \left| \sqrt{x} - \sqrt{3} \right| = 1 - a^2 + \sqrt{3}b$

（2）$a, b, x, y$ 满足 $\left| x - 3 \right| + \sqrt{3}b = y - 1 - b^2$

【答案】$C$

【解析】条件（1）（2）单独不充分，联合（1）（2），

$$\begin{cases} y + \left| \sqrt{x} - \sqrt{3} \right| = 1 - a^2 + \sqrt{3}b \\ \left| x - 3 \right| + \sqrt{3}b = y - 1 - b^2 \end{cases} \Rightarrow \left| x - 3 \right| + \left| \sqrt{x} - \sqrt{3} \right| + a^2 + b^2 = 0 \text{。}$$

**【模式 5】一遇到比例问题，马上令比例系数为 $k$。**

【例】（2002.01）设 $\dfrac{1}{x} : \dfrac{1}{y} : \dfrac{1}{z} = 4 : 5 : 6$，则使 $x + y + z = 74$ 成立的 $y$ 值是（     ）。

$A$  24        $B$  36        $C$  $\dfrac{74}{3}$        $D$  $\dfrac{37}{2}$        $E$  26

【答案】$A$

【解析】$\dfrac{1}{x} : \dfrac{1}{y} : \dfrac{1}{z} = 4 : 5 : 6 \Rightarrow x : y : z = \dfrac{1}{4} : \dfrac{1}{5} : \dfrac{1}{6} = 15 : 12 : 10$，可设

$x = 15k, y = 12k, z = 10k$

**【模式 6】一遇到选择原始参数，马上特值排除法。**

【例】关于 $x$ 的方程 $(m-2)x^2 - (3m+6)x + 6m = 0$ 有两个异号根，且负根绝对值大于正根，则 $m$ 的取值范围为（     ）。

$A$  $-\dfrac{2}{5} \leq m < 0$      $B$  $-\dfrac{2}{5} \leq m < 1$      $C$  $-\dfrac{2}{5} \leq m < 10$      $D$  $\dfrac{2}{5} \leq m < 10$      $E$  $0 <$

【答案】$A$

【解析】取 $m = 2$，$m = 0$ 代入检验。

**【模式 7】一遇到两部分组成整体时，马上采用杠杆交叉法。**

【例】有浓度为 60%的浓液若干，加了一定量的水后，稀释成 48%的浓液，如果再加入同样
  多的水。浓度为（    ）。

*A*  40%      *B*  45%      *C*  50%      *D*  55%      *E*  65%

【答案】*A*


**【模式 8】一遇到百分比问题中无数值，马上将基准量取为 100。**
【例 4】一种商品，按期望得到 50% 的利润来定价，结果只销售掉 70% 的商品。为尽早销售掉剩
下的商品，商店决定按定价打折销售。这样获得的全部利润，是原来所期望利润的 82%，问打了
（    ）折。

*A*  8      *B*  7      *C*  6      *D*  5      *E*  6.5

【答案】*A*
【解析】设该商品的进价为 100 元。


**【模式 9】一遇到分数或比例问题，马上观察倍除原则。**
【例】某乡共有 4 个村，甲村人口是全乡人口数的 $\dfrac{4}{13}$，乙村人口是甲村人口数

的 $\dfrac{5}{6}$，丙村人口是甲乙两村人口总数的 $\dfrac{4}{11}$，丁村比丙村多 4000 人，则全乡人口

总数（    ）万元。

*A*  15.6      *B*  15      *C*  16.2      *D*  15.4      *E*  10

【答案】*A*
【解析】总人口数一定是 13 的倍数。


**【模式 10】一遇到比例多次变化问题，马上统一不变量。**
【例】一、二班人数比为 8:7，现在二班调入 9 人，二班人数不变，则此时一、二班人数
比变为 4:5，问原来两班共有（    ）人。
*A* 27      *B* 36      *C* 45      *D* 60      *E* 80
【答案】*C*

【解析】　一班 ： 二班 =8：7=8:7
　　　　　一班 ： 二班'=4:5=8:10


**【模式 11】一遇到分段计费问题，马上确定有效区间（值）。**
【例】（2012.01）某商场在一次活动中规定：一次购物不超过 100 元时没有优惠；超过 100

元而没有超过 200 元时，按该次购物全额 9 折优惠，超过 200 元，其中 200 元按 9 折优惠，超过 200 元的部分按 8.5 折优惠。若甲乙两人在该商场购买的物品分别付费 94.5 元和 197 元，则两人购买的物品在举办活动前需要的付总额是（      ）元。

$A$　291.5　　　$B$　314.5　　　$C$　325　　　$D$　291.5或314.5　　　$E$　314.5 或325

【答案】$E$

【解析】

| 购物额（元） | 折扣 | 有效值 |
| --- | --- | --- |
| ＜100 | 0% | （0，100] |
| [100,200) | 10% | （90，180） |
| [200,+∞) | 15% | （180，+∞） |

【模式 12】一遇到线性规划问题，马上找性价比。

【例】（2010.01.13）某居民小区决定投资 15 万元修建停车位。据测算，修建一个室内车位的费用为 5000 元，修建一个室外车位的费用为 1000 元。考虑到实际因素，计划室外车位的数量不少于室内车位的 2 倍，也不多于室内车位的 3 倍，这笔投资最多可修建车位的数量为（      ）。

$A$　78　　　$B$　74　　　$C$　72　　　$D$　70　　　$E$　66

【答案】$B$

【模式 13】一遇到水流中的相遇追击时间，马上将水速取成 0。

【例】某人畅游长江，逆流而上，在 $A$ 处丢失一只水壶，他向前又游了 20 分钟后，才发现丢失了水壶，立即返回追寻，在离 $A$ 处 2 千米的地方追到，则他返回寻水壶用了多少分钟？

【解析】水流中的追击和相遇的时间问题与水流速度无关，可取水流速度为0计算。

【模式 14】一遇到条件中含有质数，马上在选项中寻找该质数（质数遗传法）。

【例】$\dfrac{(2^2-1)\times(3^2-1)\times\cdots\times(100^2-1)}{(2\times3\times\cdots99\times100)^2}=$（      ）。

$A$　1　　　$B$　$\dfrac{1}{2}$　　　$C$　$\dfrac{51}{100}$　　　$D$　$\dfrac{101}{200}$　　　$E$　$\dfrac{49}{100}$

【答案】$D$

【解析】数字遗传法：

$$\frac{(2^2-1)\times(3^2-1)\times\cdots\times(100^2-1)}{(2\times3\times\cdots99\times100)^2}=\frac{(2^2-1)\times(3^2-1)\times\cdots\times(100-1)(100+1)}{(2\times3\times\cdots99\times100)^2},$$

故可知结果中必含 101，排除其他选项。

**【模式 15】一遇到含有 $n$ 的命题，马上取 $n=1,2$ 验证。**

【例】（2003-10）数列 $\{a_n\}$ 的前 $n$ 项和 $S_n=4n^2+n-2$，则它的通项 $a_n$ 是（　　　）。

$A$　$8n-3$　　$B$　$4n+1$　　$C$　$8n-2$　　$D$　$8n-5$　　$E$　$\begin{cases}3,&n=1\\8n-3,&n\ge2\end{cases}$

【答案】$E$

【例】（2009-1）$a_1^2+a_2^2+a_3^2+\cdots+a_n^2=\dfrac{1}{3}(4^n-1)$。

（1）数列 $\{a_n\}$ 的通项公式为 $a_n=2^n$

（2）在数列 $\{a_n\}$ 中，对任意正整数 $n$，有 $a_1+a_2+a_3+\cdots+a_n=2^n-1$

【答案】$B$

## 第二节几何

**【模式 1】一遇到求解长度，角度问题较难，马上进行测量估算。**

**【例】**（2012-1）如图所示，$\Delta ABC$ 是直角三角形，$S_1$，$S_2$，$S_3$ 为

正方形。

已知 $a,b,c$ 为 $S_1$，$S_2$，$S_3$ 的边长，则（    ）。
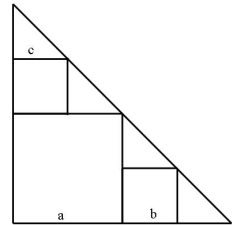
$A$　　$a=b+c$　　　　$B$　　$a^2=b^2+c^2$　　　　$C$　　$a^2=2b^2+2c^2$　　　　$D$　　$a^3=b^3+c^3$

$E$　　$a^3=2b^3+2c^3$

**【答案】** $A$

**【解析】** 测量线段长度关系。

**【模式 2】一遇到固定图形的面积，马上观察选项特征。**

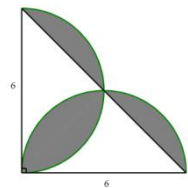**【例】**（2011-1）四边形 $ABCD$ 是边长为 1 的正方形，弧

$AOB, BOC, COD, DOA$ 均为半圆，则阴影部分的面积为（    ）。

$A$　$\dfrac{1}{2}$　　　$B$　$\dfrac{\pi}{2}$　　　$C$　$1-\dfrac{\pi}{4}$　　　$D$　$\dfrac{\pi}{2}-1$　　　$E$　$2-\dfrac{\pi}{2}$

**【答案】** $E$

**【模式 3】一遇到有对称的面积，马上采用割补法。**

**【例题】** 下图中，三角形为等腰直角三角形，则图中的阴影部分的面积为（    ）。

$A$　$18\pi-36$　　　$B$　$9\pi-18$　　　$C$　$9\pi-9$

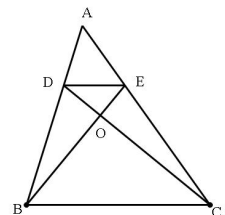$D$　$\dfrac{9}{2}\pi-9$　　　$E$　$\dfrac{9}{4}\pi-\dfrac{9}{2}$

**【答案】** $B$

**【模式 4】一遇到平行问题，马上找相似图形。**

**【例】** 已知在 $\Delta ABC$ 中 $DE /\!/ BC$，$AD:DB=1:2$，$S_{\Delta DOE}=1$，则

$S_{\Delta ABC}=$（    ）。

$A$　12　　　$B$　16　　　$C$　18　　　$D$　20　　　$E$　24

**【答案】** $C$

**【模式 5】一遇到折叠的面积，马上找全等。**

**【例】**（2009-1）直角三角形 $ABC$ 的斜边 $AB = 13cm$，直角边 $AC = 5cm$，把 $AC$ 对折到 $AB$ 上去与斜边相重合，点 $C$ 与点 $E$ 重合，折痕为 $AD$，则图中阴影部分的面积为（　　）$cm^2$。
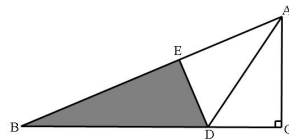
$A$　20　　　　$B$　$\dfrac{40}{3}$　　　　$C$　$\dfrac{38}{3}$　　　　$D$　14　　　　$E$　12

**【答案】** $B$

**【模式 6】一遇到坐标轴交点问题，马上看常数项。**

**【例】**由曲线 $|x| + |2y| = 4$ 所围成的平面图形的面积是（　　）。

$A$ 12　　　$B$ 14　　　$C$ 16　　　$D$ 18　　　$E$ 8

**【答案】** $C$
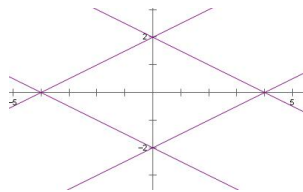
**【模式 7】一遇到对称问题，马上反代求解。**

**【例】**点 $P(-4,2)$ 关于直线 $l : 2x - y + 1 = 0$ 的对称点 $P'$ 的坐标为（　　）。

$A$　$(\dfrac{16}{3}, -\dfrac{16}{3})$　　$B$　$(\dfrac{16}{3}, -\dfrac{16}{5})$　　$C$　$(\dfrac{16}{5}, -\dfrac{8}{5})$　　$D$　$(\dfrac{8}{3}, -\dfrac{8}{5})$　　$E$　$(\dfrac{8}{3}, -\dfrac{16}{5})$
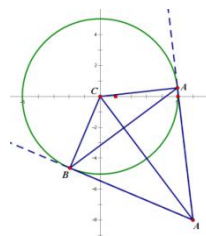
**【答案】** $C$

**【模式 8】一遇到切线问题，马上连接圆心与切点。**

**【例】**过点 $P(6,-8)$ 作 $x^2 + y^2 = 25$ 的两条切线，分别切于 $A, B$ 两点，则点 $P$ 到 $AB$ 直线的距离为（　　）。

$A$ 15　　$B$ 10　　$C$ $\dfrac{15}{2}$　　$D$ 5　　$E$ 6
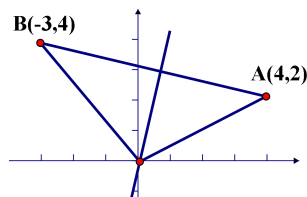
**【答案】** $C$

**【模式 9】一遇到线圆问题，马上求出圆心到直线的距离。**

**【例】**圆 $(x-a)^2 + (y-2)^2 = 4(a > 0)$ 及直线 $l : x - y + 3 = 0$，

当 $l$ 被圆截得的弦长为 $2\sqrt{3}$ 时，$a = $（　　）。

$A$ $\sqrt{2}$　　$B$ $2 - \sqrt{2}$　　$C$ $\sqrt{2} - 1$　　$D$ $-\sqrt{2} - 1$　　$E$ $\pm\sqrt{2} - 1$

【答案】$C$

## 【模式 10】一遇到解析几何最值，马上找特殊位置。

【例】 已知点 $A(4,2),B(-3,4)$，过原点的直线 $l$ 与线段 $AB$ 相交，则直线 $l$ 的斜率 $k$ 的取值范围为（   ）。

$A\ k \geq \dfrac{1}{2}$ 或 $k \leq -\dfrac{4}{3}$     $B\ -\dfrac{4}{3} \leq k \leq \dfrac{1}{2}$     $C\ k \geq \dfrac{4}{3}$ 或 $k \leq \dfrac{1}{2}$

$D\ \dfrac{1}{2} \leq k \leq \dfrac{4}{3}$     $E\ k \leq -\dfrac{3}{4}$ 或 $k \geq 4$

【答案】$A$


## 【模式 11】一遇到光的反射问题，马上利用对称求解。

# 第三节 数据分析

【模式 1】几个元素排序，要出现几的阶乘

【模式 2】指定元素不参选，指定位置不排序

【模式 3】相邻问题捆绑打包，相间问题插空隔离

【模式 4】打包与插孔并存，先打包再插空

【模式 5】正面情况较多反面求解

【模式 6】遇到至少至多问题，可以考虑反面思考

【模式 7】相同元素分配采用隔板法

【模式 8】对号入座只一种方法，不对号记住 1, 2, 9

【模式 9】等数量分组，要除以等数量组数的阶乘

【模式 10】独立事件，都怎样的概率等于每个怎么样的概率相乘

【模式 11】独立事件、模板：试钥匙、试密码、破译密码、命中敌机

【模式 12】伯努利公式模板：天气预报、比赛、直到

【模式 13】方差和标准差表示数据的稳定性：越小越稳定，越大越不稳定

【模式 14】直方图的面积表示频率，频数等于频率乘以总数

【模式 15】直方图所有面积之和等于 1

# 第三章 解题技巧

抓住特征、逆施倒行；火眼金睛，一眼洞穿；

观察思考，估算判断；多思少算，特值排除；

运动变化，巧用极端，数形结合，巧用直观；

敢于排除，善于排除；注意平衡，巧用对称；

等价转化，活用定义；巧用蕴含，果断排除。

# 第一节 条件充分性判断解题技巧

条件充分性判断题目，共十道，包含 $A,B,C,D,E$ 五个选项，根据历年真题总结，其中选择 $A,B$ 两选项的题目一般为 4 道，最多 5 道；选择 $C$ 选项的题目一般 3 道；$D$ 项 2 道左右，$E$ 项 1 道不超过两道。根据以上总结，基础不好的可根据以下技巧先将选择 $A,B,C$ 项的题目做出来，其余根据技巧不能确定的题目就空着，最后统一选择 $D$ 即可。基础较好的，可继续了解掌握选择 $D,E$ 项的技巧。

**一、选 $A$ 或 $B$ 选项，特征：只有一个条件充分，另一个不充分。**
**【使用范围】如果两条件复杂程度有明显差异时**
1、 印刷的长度明显不同时，选复杂的选项

【例 3.1】直线 $L$ 的方程为 $3x-y-20=0$

（1）过点 $(5,-2)$ 且与直线 $3x-y-2=0$ 平行的直线方程是 $L$

（2）平行四边形 $ABCD$ 的一条对角线固定在 $A(3,-1),C(2,-3)$ 两点，$D$ 点在直线 $3x-y+1=0$ 上移动，则 $B$ 点轨迹所在的方程为 $L$

【答案】$B$

2、印刷长度相当时。包含考点相对较难、公式相对复杂、方法较难、运算量大的项更充分。
【例 3.2】$m=2$

（1）设 $m$ 是整数，且方程 $3x^2+mx-2=0$ 的两根都大于 -2 而小于 1

（2）数列 $\{a_n\}$ 的通项公式 $a_n=\dfrac{2}{n^2-4n+5}$，则 $\{a_n\}$ 的最大项是第 $m$ 项

【答案】$B$。

3、当两条件矛盾时，既无法联合，否定掉一个，可选另一个充分。

4、当两条件出现包含条件关系时，优先选小的充分 。

【例 3.3】$ax^2 + bx + 1$ 与 $3x^2 - 4x + 5$ 的积不含 $x$ 的一次方项和三次方项

（1）$a:b = 3:4$                      （2）$a = \dfrac{3}{5}, b = \dfrac{4}{5}$

【答案】$B$。

**5、两条件是数值形式，数值复杂的优先充分** 表现为：负大于正；不易整除大于易整除；绝对值大于不含绝对值；含根号大于不含根号；对数函数复杂程度大于指数函数复杂程度大于幂函数复杂程度。

【例 3.4】已知 $a, b$ 为有理数，那么多项式 $f(x) = ax^3 - ax^2 - ax + b$ 含有因式 $x + 3$

（1）方程 $f(x) = 0$ 的一个根是 $\sqrt{3}$     （2）方程 $f(x) = 0$ 的一个根是 1

【答案】$A$

**6、一个为相对量的百分比，另一个为绝对量的数值，优先选百分比。**
【例 3.5】本学期某大学的 $a$ 个学生或者付 $x$ 元的全额学费或者付半额学费，付全额学费的学生所付的学费占 $a$ 个学生所付学费总额的比是 $\dfrac{1}{3}$。

（1）这 $a$ 个学生中 20% 的人付全额学费
（2）这 $a$ 个学生本学期共付 9120 元学费
【答案】$A$。

**7、某一个条件对题干无作用，选另一个有作用的条件为充分。**
【例 3.6】$a|a - b| \geq |a|(a - b)$。

（1）实数 $a > 0$                  （2）实数 $a, b$ 满足 $a > b$

【答案】$A$。

**二、选 $C$ 选项，特征：两个单独不充分 联合充分。**
**1、题干须由两个参数或要素决定 ，而每个条件分别给出一个参数或要素，或两条件的信息量不够，需要互为补充时。**

【例 3.7】若 $a, b \in R, |a| + |b| > 1$ 成立。

（1）$b \leq -1$                 （2）$|a| \geq 1$

【答案】$C$。

2、两条件的范围有交集，且单独不充分。

【例 3.8】不等式 $\left|x+\dfrac{1}{x}\right|>|a-2|+1$ 对于一切实数 $x$ 均成立

（1）$0<a<3$          （2）$1<a<5$

【答案】$C$

3、两个条件一个条件为表达式，另一个为定性的文字补充说明，起辅助作用。

【例 3.9】$\dfrac{1}{a}+\dfrac{1}{b}+\dfrac{1}{c}>\sqrt{a}+\sqrt{b}+\sqrt{c}$ 。

（1）$abc=1$          （2）$a,b,c$ 为不全相等的正数

【答案】$C$

【例 3.10】$\{a_n\}$ 的前 $n$ 项和 $S_n$ 与 $\{b_n\}$ 的前 $n$ 项和 $T_n$ 满足 $S_{19}:T_{19}=3:2$

（1）$\{a_n\}$ 和 $\{b_n\}$ 是等差数列      （2）$a_{10}:b_{10}=3:2$

【答案】$C$

三、选 $D$ 选项，特征：条件 1 充分，条件 2 也充分。

【注】基础一般的直接利用上面的方法选好 $A,B,C$，其他的都用 $D$ 来代替，可对 7 或 8 个。

1、两个条件为等价关系（两条件相同）；

2、范围大包含范围小的，且范围大的充分时；

3、两个条件的微小差异，被题干抵消（微小差异表现形式正负，倒数，符号对等）。

【例 3.11】关于 $x$ 的方程 $\dfrac{1}{x-2}+3=\dfrac{1-x}{2-x}$ 与 $\dfrac{x+1}{x-|a|}=2-\dfrac{3}{|a|-x}$ 有相同的增根

（1）$a=2$          （2）$a=-2$

【例 3.12】$x^2+mxy+6y^2-10y-4=0$ 的图形是两条直线

（1）$m=7$          （2）$m=-7$

【例 3.13】曲线 $ax^2 + by^2 = 1$ 通过 4 个定点。

（1）$a + b = 1$　　　　　　　　　　（2）$a + b = 2$

【例 3.14】圆 $(x-1)^2 + (y-2)^2 = 4$ 和直线 $(1+2\lambda)x + (1-\lambda)y - 3 - 3\lambda = 0$ 交于两点

（1）$\lambda = \dfrac{2\sqrt{3}}{5}$　　　　　　　　　（2）$\lambda = \dfrac{5\sqrt{3}}{2}$

4、 在几何图形中，由于点、线等位置或距离对称性， 往往选 $D$。

【例 3.15】直线 $y = k(x+2)$ 是圆 $x^2 + y^2 = 1$ 的一条切线

（1）$k = -\dfrac{\sqrt{3}}{3}$ ；　　　　　　　　（2）$k = \dfrac{\sqrt{3}}{3}$

5、 两条件范围为两点之外。

【例 3.16】方程 $2ax^2 - 2x - 3a + 5 = 0$ 的一个根大于 1，另一个根小于 1

（1）$a > 3$　　　　　　　　　（2）$a < 0$

【例 3.17】$\left| \log_a x \right| > 1$

（1）$x \in [2,4], \dfrac{1}{2} < a < 1$　　　　　　（2）$x \in [4,6], 1 < a < 2$

6、 题干等式将两条件表达式等价起来。

【例 3.18】等差数列前 3 项依次为 $a, 4, 3a$ ，前 n 项的和为 $S_n$，则 $S_k = 2550$

（1）$k - a = 48$　　　　　　　　　（2）$k + a = 52$

7 、题干情况有 2 种或多种，而每个条件分别给出一种值。

【例 3.19】$x_1, x_2$ 是方程 $x^2 - 2(k+1)x + k^2 + 2 = 0$ 的两个实根.

（1）$k > \dfrac{1}{2}$　　　　　　　　　（2）$k = \dfrac{1}{2}$

**四、选 $E$ 选项，特征：条件（1）和条件（2）单独都不充分，联合起来也不充分。**
1、 往往不需要复杂的推理或计算。通过特殊反例，常识，逻辑关系可看出来；
2、 选 $E$ 选项往往不需要联合，联合的选 $C$ 的几率高。

## 第二节条件充分性判断解实战演练

**1、条件联合型（备选答案：　　　　　　　）**

【例 3.20】$\{a_n\}$的前$n$项和$S_n$与$\{b_n\}$的前$n$项和$T_n$满足$S_{19}:T_{19}=3:2$

（1）$\{a_n\}$和$\{b_n\}$是等差数列　　　　（2）$a_{10}:b_{10}=3:2$

【例 3.21】设直线$y=x+b$分别在第一象限和第三象限与曲线$y=\dfrac{4}{x}$相交于点 A、点 B，则能确定$b$的值.

（1）已知以$AB$为对角线的正方形的面积（2）点 A 的横坐标小于纵坐标

【例 3.22】已知函数$f(x)=ax^2+bx+c$，则能确定$a,b,c$的值

（1）曲线$y=f(x)$经过点（0，0）和点（1，1）

（2）曲线$y=f(x)$与直线$y=a+b$相切

【例 3.23】已知$M=\{a,b,c,d,e\}$是一个整数集合，则能确定集合$M$

（1）$a,b,c,d,e$的平均值为 10　　　　（2）$a,b,c,d,e$的方差为 2

【例 3.24】已知袋中装有红、黑、白三种颜色的球若干个，则红球最多

（1）随机取出的一球是白球的概率为$\dfrac{2}{5}$

（2）随机取出的两球中至少有一个是黑球的概率小于$\dfrac{1}{5}$

【例 3.25】几个朋友外出游玩，购买了一些瓶装水，则能确定的瓶装水数量

（1）若每个分 3 瓶，则剩余 30 瓶　　（2）若每人分 10 瓶，则只有一人不够

【例 3.26】已知$x_1,x_2,x_3$为实数，$\bar{x}$为$x_1,x_2,x_3$的平均值，则$\left|x_k-\bar{x}\right|\le 1,k=1,2,3$，

（1）$\left|x_k\right|\le 1,k=1,2,3$　　　　（2）$x_1=0$

【例 3.27】底面半径为$r$，高为$h$的圆柱体表面积记为$S_1$，半径为$R$的球体表面积记为$S_2$，则$S_1\le S_2$

（1）$R\ge\dfrac{r+h}{2}$　　（2）$R\le\dfrac{2h+r}{3}$

【例 3.28】设 $\{a_n\}$ 的等差数列，则能确定数列 $\{a_n\}$

（1） $a_1 + a_6 = 0$　　　　　　　　（2） $a_1 a_6 = -1$

【例 3.29】 $\dfrac{1}{a} + \dfrac{1}{b} + \dfrac{1}{c} > \sqrt{a} + \sqrt{b} + \sqrt{c}$

（1） $abc = 1$　　　　　　　　（2） $a, b, c$ 为不全相等的正数

【例 3.30】设 $y = \sqrt{9 - x}$ ，则 $y$ 只有 1 种取值情况

（1） $x < 8$　　　　　　　　（2） $x, y$ 是正整数
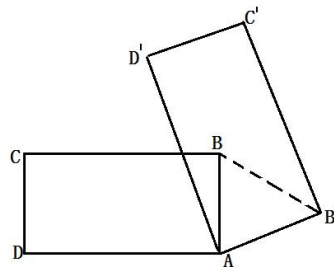
## 2、条件等价型 （ 备选答案：　　　　　　　）

【例 3.31】关于 $x$ 的方程 $\dfrac{1}{x-2} + 3 = \dfrac{1-x}{2-x}$ 与 $\dfrac{x+1}{x-|a|} = 2 - \dfrac{3}{|a|-x}$ 有相同的增根

（1） $a = 2$　　　　　　　　（2） $a = -2$

【例 3.32】如图，长方形 $ABCD$ 的长与宽分别为 $2a$ 和 $a$ ，将其以顶点 $A$ 为中心顺时针旋转 $60^\circ$ ，则四边形 $AECD$ 的面积为 $24 - 2\sqrt{3}$

（1） $a = 2\sqrt{3}$

（2） $\Delta AB'B$ 的面积为 $3\sqrt{3}$

【例 3.33】等比数列 $\{a_n\}$ 满足 $a_2 + a_4 = 20$ ，则 $a_3 + a_5 = 40$ .

（1）公比 $q = 2$　　　　　　　　（2） $a_1 + a_3 = 10$

【例 3.34】现从 3 个男同学、3 个女同学中选出两位三好学生，则有 9 种选法
（1）至少要选出 1 个男同学　　　　　　（2）至少要选出 1 个女同学

## 3、条件矛盾型 （ 备选答案：　　　　　　　）

【例 3.35】张三以卧姿射击 10 次，命中靶子 7 次的概率是 $\dfrac{15}{128}$

（1）张三以卧姿打靶的命中率是 0.2　　（2）张三以卧姿打靶的命中率是 0.5

【例 3.36】信封中装有 10 张奖券，只有 1 张有奖，从信封中同时抽取 2 张奖券，中奖的概率记为 $p$ ；从信封中每次抽取 1 张奖券后放回，如此重复抽取 $n$ 次，中奖的概率为 $Q$ ，

则 $p < Q$

（1） $n = 2$                          （2） $n = 3$

**4、条件包含型：（1）包含（2）（ 备选答案：           ）**
**　　　　　　　 （2）包含（1）（ 备选答案：           ）**

【例 3.37】方程 $x^2 - 3x - 2k = 0$ 有两个实根，则有且仅有一个根在 $(-1,1)$ 内

（1） $-\dfrac{1}{2} < k < 2$          （2） $-1 < k < \dfrac{5}{2}$

【例 3.38】方程 $3x^2 + [2b - 4(a + c)]x + (4ac - b^2) = 0$有相等的实根

（1） $a,b,c$ 是等边三角形的三条边          （2） $a,b,c$ 是等腰三角形的三条边

【例 3.39】某人用 10 万元购买了甲、乙两种股票，若甲种股票上涨 $a$％、乙种股票下降 $b$％时，此人购买的甲、乙两种股票总值不变，则此人购买甲种股票用了 6 万元

（1） $a = 2, b = 3$          （2） $3a - 2b = 0(a \neq 0)$

【例 3.40】设 $a_1 = 1, a_2 = k, ..., a_{n+1} = |a_n - a_{n-1}|, (n \geq 2)$，则 $a_{100} + a_{101} + a_{102} = 2$

（1） $k = 2$          （2） $k$ 是小于 20 的正整数

【例 3.41】 $p = mq + 1$ 为质数

（1） $m$ 为正整数， $q$ 为质数          （2） $m$、 $q$ 均为质数

【例 3.42】三个科室的人数分别为 6、3 和 2，因工作需要，每晚需要排 3 人值班，则在两个月中以便每晚的值班人员不完全相同

（1）值班人员不能来自同一科室          （2）值班人员来自三个不同科室

**5、两个条件一易一难型（此题备选答案：           ）**

【例 3.43】 $2a^2 - 5a - 2 + \dfrac{3}{a^2 + 1} = -1$

（1） $a$ 是方程 $x^2 - 3x + 1 = 0$的根          （2） $|a| = 1$

【例 3.44】在矩形 $ABCD$ 的边 $CD$ 上随机取一点 $P$，使得 $AB$ 是 $\Delta APB$ 的最大边的概率大于 $\dfrac{1}{2}$

（1） $\dfrac{AD}{AB} < \dfrac{\sqrt{7}}{4}$          （2） $\dfrac{AD}{AB} > \dfrac{1}{2}$

## 第三节 蒙猜原则

1. 整除性原则：甲乙之比为 $a:b$，则甲是 $a$ 的倍数，乙是 $b$ 的倍数，甲乙是 $a+b$ 的倍数。

2. 质数性原则：条件中的数字含有质数，答案中一般会保留这个质数在。

3. 相视性原则：几个选项中都带有某些特征，而个别选项中却不含有这个特征，那么就排除个别选型。

4. 求和性原则：出现两个选项之和数字之和是另外一个选项，那么就选另外选项。包括选项中含有敏感文字"或"，"并集"等。

5. 互补性原则：若有两个选项之和是总数时，则就选这两个选项中的一个。

6. 分母原则：伯努利概型中，可从分母比较排除选项。

7. 结构性原则：正方形面积一般为平方数；等边三角形面积中含有 $\sqrt{3}$；圆弧严格外凸型：$a\pi - b$，圆弧严格内凹型：$c - d\pi$。

# 第四章 公式与结论

## 第一节 实数、绝对值、比和比例、均值不等式

### 一、实数

1、指数运算（$a \neq 0$）

（1）$a^m \cdot a^n = a^{m+n}$， $a^m \div a^n = a^{m-n}$；

（2）$(a^m)^n = a^{mn}$；

（3）$(ab)^m = a^m b^m$， $(\dfrac{a}{b})^m = \dfrac{a^m}{b^m}$；

（4）$a^{-m} = \dfrac{1}{a^m}$。

2、对数运算（$\log_a N, a > 0, a \neq 1$）

（1）$\log_a 1 = 0$， $\log_a a = 1$；

（2）$\log_a(MN) = \log_a M + \log_a N$， $\log_a(\dfrac{M}{N}) = \log_a M - \log_a N$；

（3）$\log_a(M^n) = n \log_a M$， $\log_a \sqrt[n]{M} = \dfrac{1}{n} \log_a M$；

（4）换底公式 $\log_a M = \dfrac{\log_b M}{\log_b a}$；

（5）对数恒等式 $a^{\log_a N} = N$。

3、循环小数化分数

（1）纯循环小数小数 $0.\dot{a}\,b\,\dot{c} = \dfrac{abc}{999}$；

（2）混循环小数小数 $0.a\dot{b}\,\dot{c} = \dfrac{abc - a}{990}$。

4、在加减运算中和的奇偶性，由包含奇数的个数所决定：奇数个奇数，和为奇数；偶数个奇数，和为偶数。

5、$a, b, c \in Q, a + \sqrt{2}b + \sqrt{3}c = 0 \Rightarrow a = b = c = 0$。

### 二 、绝对值

1、非负性：即 $|a| \geq 0$，任何实数 $a$ 的绝对值非负。

（1）绝对值：$|a| \geq 0$

（2）偶数次方、根号：$a^2, a^4, \cdots, \sqrt{a}, \sqrt[4]{a}, \cdots \geq 0$；

（3）指数函数：$a^x(a > 0, \text{且} a \neq 1)$。

【结论】有限个非负性数之和为零，则每一个非负数均为零，一般需要通过配方运算凑出偶次方。

【结论】代数式中出现绝对值、偶次方、偶次根式或方程的个数少于未知数的个数，多考察非负性。

2、自比性：$\dfrac{a}{|a|} = \dfrac{|a|}{a} = \begin{cases} 1, & a > 0 \\ -1, & a < 0 \end{cases}$。

【结论】一遇到自比性，马上看字母的正负性。

3、三角不等式

（1）$\big||a| - |b|\big| \leq |a + b| \leq |a| + |b|$，

左边等式成立的条件：$ab \leq 0$，右边等式成立的条件：$ab \geq 0$；

（2）$\big||a| - |b|\big| \leq |a - b| \leq |a| + |b|$，

左边等式成立的条件：$ab \geq 0$，右边等式成立的条件 $ab \leq 0$。

【注】等式成立的条件。

4、函数 $y = |x - a| + |x - b|$ 与 $y = |x - a| - |x - b|$ 的图像的特征。

## 三、比和比例

1、合分比定理：$\dfrac{a}{b} = \dfrac{c}{d} \Leftrightarrow \dfrac{a + b}{a - b} = \dfrac{c + d}{c - d}$。

2、等比定理：$\dfrac{a}{b} = \dfrac{c}{d} = \dfrac{e}{f} = \dfrac{a + c + e}{b + d + f}(b + d + f \neq 0)$。

【结论】一遇到等比，马上看分母之和是否为零。

3、增减性：若 $m > 0$，$\dfrac{a}{b} > 1$,则有 $1 < \dfrac{a + m}{b + m} < \dfrac{a}{b}$；$0 < \dfrac{a}{b} < 1$,则有 $\dfrac{a}{b} < \dfrac{a + m}{b + m} < 1$。

## 四、平均值

1、$\dfrac{x_1 + x_2 + \ldots + x_n}{n} \geq \sqrt[n]{x_1 \cdot x_2 \ldots x_n}$   $(x_i > 0 \qquad i = 1, \ldots, \ n)$,

当且仅当 $x_1 = x_2 = \ldots\ldots = x_n$ 时，等号成立。

**【注】一正二定三相等，对于"定"，一般需要代数式变形去"凑"，"相等"用来检验是否取到最值。**

2、常用的均值不等式

（1） $a, b \in R^+, \dfrac{a+b}{2} \geq \sqrt{ab}$ ，当 $a = b$ 时，等号成立；

（2） $a, b, c \in R^+, \dfrac{a+b+c}{3} \geq \sqrt[3]{abc}$ ，当 $a = b$ 时，等号成立；

（3） $a \in R^+$ ， $a + \dfrac{1}{a} \geq 2$ ,当 $a = 1$ 时等号成立；

（4） $ab > 0, \dfrac{b}{a} + \dfrac{a}{b} \geq 2$ ，当 $a = b$ 时，等号成立。

# 第二节 整式、分式、余数

## 一、乘法公式与因式分解

**1、乘法公式**

（1）$\begin{cases} a^2 - b^2 = (a+b)(a-b) \\ (a\pm b)^2 = a^2 \pm 2ab + b^2 \end{cases}$；

（2）$\begin{cases} (a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc \\ \dfrac{1}{2}[(a+b)^2 + (b+c)^2 + (c+a)^2] = a^2 + b^2 + c^2 + ab + bc + ca \end{cases}$；

（3）$\begin{cases} (a\pm b)^3 = a^3 \pm 3a^2 b + 3ab^2 \pm b^3 \\ a^3 \pm b^3 = (a\pm b)(a^2 \pm ab + b^2) \end{cases}$。

**2、因式分解：一提二套三十字四分组。**

## 二、带余除法

$\left.\begin{array}{cccc} F(x) = & f(x)g(x) & + & r(x) \\ \downarrow & \downarrow & \downarrow & \downarrow \\ \text{被除式} & \text{除式} & \text{商式} & \text{余式} \end{array}\right\} \Rightarrow F(x) - r(x) = f(x)g(x)$，其中余式 $r(x)$ 的次数小于除式

$f(x)$ 的次数，特别地，当 $r(x) = 0$ 时，称 $F(x)$ 能被 $f(x)$ 整除，记为 $f(x)\big| F(x)$。

## 三、余数定理

多项式 $f(x) = a_n x^n + a_{n-1}x^{n-1} + \cdots\cdots + a_1 x + a_0 (a_n \neq 0)$ 除以一次因式 $(x-a)$，所得余

数为 $F(a)$；除以一次因式 $(ax-b)$ 所得余数为 $F(\dfrac{b}{a})$，特别地，当 $F(a) = 0$ 时，有

$(x-a)\big| f(x)$。

**【结论】竖式除法适合被除式与除式相差不超过 3 次，且系数不含字母；**
**【结论】待定系数法适合被除式与除式相差 1 次，且首尾系数不含字母；**
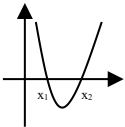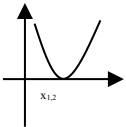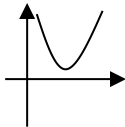**【结论】余数定理适合求其中的参数的值。**

## 第三节 函数、方程、不等式

**一、方程**

1、判别式：$a, b, c \in R$

$$\Delta = b^2 - 4ac \begin{cases} \Delta > 0 & \text{两个不相等的实根} \\ \Delta = 0 & \text{两个相等的实根} \\ \Delta < 0 & \text{无实根} \end{cases}。$$

2、图像与根的关系

| $\Delta = b^2 - 4ac$ | $\Delta > 0$ | $\Delta = 0$ | $\Delta < 0$ |
|---|---|---|---|
| $a > 0$<br>$f(x) = ax^2 + bx + c$ | | | |
| $f(x) = 0$ 的根 | $x_{1,2} = \dfrac{-b \pm \sqrt{\Delta}}{2a}$ | $x_{1,2} = -\dfrac{b}{2a}$ | 无实根 |
| $f(x) > 0$ 的解集 | $x < x_1$ 或 $x > x_2$ | $x \neq -\dfrac{b}{2a}$ | $x \in R$ |
| $f(x) < 0$ 的解集 | $x_1 < x < x_2$ | $x \in \varnothing$ | $x \in \varnothing$ |
| $f(x) \geq 0$ 的解集 | $x \leq x_1$ 或 $x \geq x_2$ | $x \in R$ | $x \in R$ |
| $f(x) \leq 0$ 的解集 | $x_1 \leq x \leq x_2$ | $x = -\dfrac{b}{2a}$ | $x \in \varnothing$ |

3、根与系数的关系（韦达定理）：$x_1, x_2$ 是方程 $ax^2 + bx + c = 0$ 的两个根，则

$$\begin{cases} x_1 + x_2 = -\dfrac{b}{a} \\ x_1 x_2 = \dfrac{c}{a} \end{cases}。$$

4、韦达定理的应用：关于两个根的对称轮换式

（1）$\dfrac{1}{x_1} + \dfrac{1}{x_2} = \dfrac{x_1 + x_2}{x_1 x_2}$；

（2）$\dfrac{1}{x_1^2}+\dfrac{1}{x_2^2}=\dfrac{(x_1+x_2)^2-2x_1x_2}{(x_1x_2)^2}$；

（3）$|x_1-x_2|=\sqrt{(x_1-x_2)^2}=\sqrt{(x_1+x_2)^2-4x_1x_2}=\dfrac{\sqrt{\Delta}}{|a|}$；

（4）$x_1^3+x_2^3=(x_1+x_2)(x_1^2-x_1x_2+x_1^2)=(x_1+x_2)[(x_1+x_2)^2-3x_1x_2]$。

## 二、不等式

1、恒成立问题

（1）$ax^2+bx+c>0$ 对任意 $x$ 都成立，则有 $a>0,\Delta<0$；

（2）$ax^2+bx+c<0$ 对任意 $x$ 都成立，则有 $a<0,\Delta<0$；

（3）$f(x)<a$ 对任意 $x$ 都成立，则有 $f_{\max}<a$；

（4）$f(x)>a$ 对任意 $x$ 都成立，则有 $f_{\min}>a$。

2、 要会根据不等式解集来判断不等式系数的特点。

3、高次不等式的解法：穿针引线法。

# 第四节 数列

## 一、$a_n$ 与 $S_n$ 的关系

1、已知 $a_n$，求 $S_n$，则 $S_n = a_1 + a_2 + \cdots + a_n = \sum_{i=1}^{n} a_i$ ；

2、已知 $S_n$，求 $a_n$，则 $a_n = \begin{cases} a_1 = S_1 \\ S_n - S_{n-1} \quad (n \geq 2) \end{cases}$ 。

## 二、等差数列

1、通项公式：$a_n = a_1 + (n-1)d = a_k + (n-k)d = nd + (a_1 - d)$ 。

【注】已知 $a_m$ 及 $a_n$，求 $d \Rightarrow (m, a_m)$ 与 $(n, a_n)$ 共线 $\Rightarrow$ 斜率 $d = \dfrac{a_n - a_m}{n - m}$ 。

2、前 $n$ 项和 $S_n$ $\quad S_n = \dfrac{a_1 + a_n}{2} \times n = na_1 + \dfrac{n(n-1)}{2}d = \dfrac{d}{2} \cdot n^2 + (a_1 - \dfrac{d}{2})n$ 。

3、等差数列性质

（1）角标性质：$m + n = k + t$ 时，有 $a_m + a_n = a_k + a_t$ ；

（2）前 $n$ 项和性质：$S_n$，$S_{2n} - S_n$，$S_{3n} - S_{2n}$, $\cdots$ 仍为等差数列；

（3）等差数列 $\{a_n\}$ 和 $\{b_n\}$ 的前 $n$ 项和分别用 $S_n$ 和 $T_n$ 表示，则 $\dfrac{a_k}{b_k} = \dfrac{S_{2k-1}}{T_{2k-1}}$ 。

## 三、等比数列

1、通项公式：$a_n = a_1 q^{n-1} = a_k q^{n-k}$ ；

2、前 $n$ 项和公式：$S_n = \begin{cases} na_1, q = 1; \\ \dfrac{a_1(1-q^n)}{1-q} = \dfrac{a_1 - a_n q}{1-q} \quad q \neq 1, \end{cases}$ ；

3、所有项之和：$S = \dfrac{a_1}{1-q}, |q| < 1$ ；

4、 等比数列性质

（1）角标性质： $m+n=k+t$ 时，有 $a_m+a_n=a_k+a_t$。

（2）前 $n$ 项和性质： $S_n$，$S_{2n}-S_n$，$S_{3n}-S_{2n}$, …仍为等比数列。

## 第五节应用题

### 一、比、百分比、比例问题

1、总量$=\dfrac{\text{部分量}}{\text{部分量所占的比例}}$。

2、甲比乙大$p\%$ $\Leftrightarrow$ $\dfrac{\text{甲}-\text{乙}}{\text{乙}}=p\%$ $\Leftrightarrow$ 甲$=$乙$\times(1+p\%)$；甲是乙的$p\%$ $\Leftrightarrow$ 乙$\times p\%$。

【注意】甲比乙大$p\%\neq$乙比甲小$p\%$(因为基准量不同)$\Rightarrow$乙比甲小$\dfrac{p\%}{1+p\%}$。

3、变化率$=\underbrace{\dfrac{\text{变化量}}{\text{变前量}}}_{\text{基准量：要找准}}\times100\%=\dfrac{|\text{现值}-\text{原值}|}{\text{原值}}\times100\%=\left|\dfrac{\text{现值}}{\text{原值}}-1\right|\times100\%$。

4、增长率$p\%\xrightarrow{\text{原值}a}$现值为$a(1+p\%)$；下降率$p\%\xrightarrow{\text{原值}a}$现值为$a(1-p\%)$。

【结论】增减并存：一件商品先提价$p\%$，再降价$p\%$，或者先降价$p\%$，再提价$p\%$，回不到原价，应比原价小。

5、连续增长：一月份产值为$a$，每月比上月增长$p\%$，则

全年的产值为$a+a(1+p\%)+a(1+p\%)^2+\cdots+a(1+p\%)^{11}$。

6、利润=售价-进价(成本价)，售价=进价$\times$(1+利润率)=进价+利润

利润率$=\dfrac{\text{利润}}{\text{进价}}\times100\%=\dfrac{\text{售价}-\text{进价}}{\text{进价}}\times100\%=(\dfrac{\text{售价}}{\text{进价}}-1)\times100\%$。

### 二、工程问题

1、工作量 = 工作效率$\times$工作时间（$S=vt$）。

（1）工作时间相同，工作量之比为工作效率之比；

（2）工作效率相同，工作量之比为工作时间之比；

（3）工作量相同，工作效率之比为时间的反比。

【技巧】可将工作量取成时间的最小公倍数，避免出现分数计算。

【技巧】遇到多种方式完成同一工程时，可采用等量代换的方法来研究。

### 三、行程问题

1、$S=vt$；$v=\dfrac{S}{t}$；$t=\dfrac{S}{v}$。

（1）时间相同，路程之比为速度之比；

（2）速度相同，路程之比为时间之比；

（3）路程相同，速度之比为时间的反比。

2、直线型的路程问题

（1）相遇问题抓住速度和、路程和，即 $S_{全程}=(v_1+v_2)\times t$；

（2）追击问题抓住速度差、路程差，即 $t_{追击}=\dfrac{S_{路程差}}{v_1-v_2}$。

3、对于圆圈型的路程问题（从同一起点同时出发，周长为 $s$，相遇一次时间为 $t$）

（1）同向运动：$S_{甲}-S_{乙}=S$，甲乙相遇一次。相遇 $n$ 次，$S_{甲}-S_{乙}=nS$；

（2）逆向运动：$S_{甲}+S_{乙}=S$，甲乙相遇一次，。相遇 $n$ 次，$S_{甲}+S_{乙}=nS$。

4、顺水，逆水问题：$v_{顺}=v_{船}+v_{水}$，$\begin{cases}v_{顺}=v_{船}+v_{水}\\ v_{逆}=v_{船}-v_{水}\end{cases}\Rightarrow\begin{cases}v_{船}=\dfrac{v_{顺}+v_{逆}}{2}\\ v_{顺}=\dfrac{v_{顺}-v_{逆}}{2}\end{cases}$。

### 四、 浓度问题

1、 浓度 $=\dfrac{浓质}{浓液}\times100\%=\dfrac{浓质}{浓质+浓剂}\times100\%$。

2、浓度不变准则：将溶液分成若干份，每份的浓度相等，都等于原来浓液的浓度；将浓液倒掉一部分，剩余浓液的浓度与原浓液的浓度相等。

3、浓液变化问题

（1）稀释问题：增加浓剂，浓质不变；

（2）浓缩问题：减少浓剂，浓质不变；

（3）加浓问题：增加浓质，浓剂不变；

（4）"混合"问题：用两种或多种浓液混合在一起，可采用浓质或浓剂质量守恒分析，也可利用杠杆原理来分析。

（5）"置换"问题：一般用浓剂等量置换浓液，记住结论，原来浓液 $v$ 升，倒出 $m$ 升，再

补等量的浓剂（水），则浓度为原来的 $\dfrac{v-m}{v}$ 。

## 五、 集合问题

1、$A \cup B = A + B - A \cap B = 全集 - \overline{A} \cap \overline{B}$ ；

2、$A \cup B \cup C = A + B + C - A \cap B - \overline{B} \cap \overline{C} - \overline{C} \cap \overline{A} + A \cap B \cap C = 全集 - \overline{A} \cap \overline{B} \cap \overline{C}$ 。

【技巧】只知道单个集合，而不知道全体的数量，可通过每区计算过的次数来计算。

【技巧】总数量=只有一个证的数量+只有两个证的数量*2+三证齐全的数量*3。

# 第六节几何

## 一、面积公式

1、三角形：

$$S = \frac{1}{2}bh = \frac{1}{2}ab\sin C = \sqrt{p(p-a)(p-b)(p-c)} = \frac{1}{2}(a+b+c)r,$$

其中 $p = \frac{a+b+c}{2}, r$ 是内切圆半径。

2、平行四边形：$S = bh = ab\sin\varphi$。

3、菱形：$S = \frac{l_1 \times l_2}{2}$，其中 $l_1, l_2$ 为对角线。

4、梯形：$S = \frac{(a+b)}{2} \times h$。

5、扇形：$S = \frac{1}{2}rl = \frac{1}{2}r^2\theta$，其中弧长 $l = r\theta$。

**【注】相似定理、蝴蝶定理，燕尾定理。**

## 二、特殊三角形

1、直角三角形

（1）勾股数：$(3,4,5)$、$(5,12,13)$、$(6,8,10)$、$(7,24,25)$；

（2）$(30^0, 60^0, 90^0)$ 三边之比为 $1:\sqrt{3}:2$；$(45^0, 45^0, 90^0)$ 三边之比为 $1:1:\sqrt{2}$；

（3）斜边上的中线等于斜边的一半。

2、等边三角形的边长为 $a$，则边上的高为 $h = \frac{\sqrt{3}}{2}a$，面积为 $S = \frac{\sqrt{3}}{4}a^2$，内切圆半径为

$\frac{\sqrt{3}}{6}a$，外接圆半径为 $\frac{\sqrt{3}}{3}a$。

## 三、常用结论

1、等底等高的两个三角形面积相等，为与它等底等高的平行四边形面积的一半；

2、三角形高相等，则面积比等于底之比；底相等，则面积比等于高之比；

3、直角三角形内切圆的半径为 $\frac{a+b-c}{2}$，外接圆的半径为斜边的一半；

4、直径所对的圆周角为 $90^0$，切线与过交点的半径垂直；

5、圆的内接四边形对角互补（可逆）。

**四、平面解析几何基本公式**

1、定比分点坐标公式 $(\dfrac{x_1 + \lambda x_2}{1+\lambda}, \dfrac{y_1 + \lambda y_2}{1+\lambda})$；

中点坐标公式 $(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2})$；

三角形重心坐标公式 $(\dfrac{x_1 + x_2 + x_3}{3}, \dfrac{y_1 + y_2 + y_3}{3})$。

2、斜率公式

（1）角度：$k = tg\theta (\theta \neq 90^0)$；（2）两点：$k = \dfrac{y_2 - y_1}{x_2 - x_1}(x_2 \neq x_1)$。

附注：常用角度的三角函数数值

| $0^0$ | $30^0$ | $45^0$ | $60^0$ | $90^0$ | $120^0$ | $135^0$ | $150^0$ |
|---|---|---|---|---|---|---|---|
| $0$ | $\dfrac{1}{2}$ | $\dfrac{\sqrt{2}}{2}$ | $\dfrac{\sqrt{3}}{2}$ | $1$ | $\dfrac{\sqrt{3}}{2}$ | $\dfrac{\sqrt{2}}{2}$ | $\dfrac{1}{2}$ |
| $1$ | $\dfrac{\sqrt{3}}{2}$ | $\dfrac{\sqrt{2}}{2}$ | $\dfrac{1}{2}$ | $0$ | $-\dfrac{1}{2}$ | $-\dfrac{\sqrt{2}}{2}$ | $-\dfrac{\sqrt{3}}{2}$ |
| $0$ | $\dfrac{\sqrt{3}}{3}$ | $1$ | $\sqrt{3}$ | 无 | $-\sqrt{3}$ | $-1$ | $-\dfrac{\sqrt{3}}{3}$ |

3、距离公式

（1）两点距离：$\sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$；

（2）点线距离：$\dfrac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}}$；

（3）线线距离：$\dfrac{|c_1 - c_2|}{\sqrt{a^2 + b^2}}$。

4、两线的夹角公式：

（1）$l_1$ 与 $l_2$ 的夹角：$\theta \in [0^0, 90^0)$，$tg\theta = \left|\dfrac{k_2 - k_1}{1 + k_1 k}\right|$；

（2）$l_1$ 到 $l_2$ 的夹角：$\theta \in [0^0, 180^0), \theta \neq 90^0$，$tg\theta = \dfrac{k_2 - k_1}{1 + k_1 k}$。

5、直线方程：

（1）点斜式：$y - y_0 = k(x - x_0)$，$k$ 未定，表示一束直线过定点；

（2）两点式：$\dfrac{y - y_1}{x - x_1} = \dfrac{y_2 - y_1}{x_2 - x_1}(x_2 \neq x_1)$；

（3）斜截式：$y = kx + b$，$k,b$ 的取值决定了直线过象限；

（4）截距式：$\dfrac{x}{a} + \dfrac{y}{b} = 1$；

（5）一般式：$ax + by + c = 0$，$a^2 + b^2 \neq 0$，

$\quad a = 0$，不含 $x$，平行与 $x$ 轴；

$\quad b = 0$，不含 $y$，平行与 $y$ 轴；

$\quad c = 0$，不含常数项，直线过原点。

6、圆的方程：

（1）标准式：$(x - a)^2 + (y - b)^2 = r^2$；

（2）一般式：$x^2 + y^2 + Dx + Ey + F = 0$，$D^2 + E^2 - 4F > 0$，

$\quad D = 0$，不含 $x$ 的一次项，圆心在 $y$ 轴；

$\quad E = 0$，不含 $y$ 的一次项，圆心在 $x$ 轴；

$\quad F = 0$，不含常数项，圆过原点。

## 六、位置关系

1、    线线：$k_1 = k_2, k_1 \cdot k_2 = -1; \dfrac{a_1}{a_2} = \dfrac{b_1}{b_2} \neq \dfrac{c_1}{c_2}, a_1 a_2 + b_1 b_2 = 0$。

2、    线圆：$d = \dfrac{|ax_0 + by_0 + c|}{\sqrt{a^2 + b^2}} (>,<,=) \quad r$。

3、    圆圆：$d = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2} \quad r_1, r_2$，公切线的条数。

## 七、对称关系

1、中心对称，点关于点对称，点为中点；线关于点对称，线线平行。

2、轴对称

（1）点关于线对称，垂直，中点，$\begin{cases} \dfrac{y - y_0}{x - x_0} \times (-\dfrac{A}{B}) = -1 \\ A \times \dfrac{x + x_0}{2} + B \times \dfrac{y + y_0}{2} + C = 0 \end{cases}$。

【注】特殊的对称轴

点 $(x_0, y_0)$ 关于 $x$ 轴对称点的坐标 $(x_0, -y_0)$；

点 $(x_0, y_0)$ 关于 $y$ 轴对称点的坐标 $(-x_0, y_0)$；

点 $(x_0, y_0)$ 关于 $x + y + c = 0$ 对称点的坐标 $(-y_0 - c, -x_0 - c)$；

点 $(x_0, y_0)$ 关于 $x - y + c = 0$ 对称点的坐标 $(y_0 - c, x_0 + c)$。

（2）线关于线对称

线线平行，必三线平行；

线线相交，必三线交于一点；

特殊的对称轴：当对称轴的斜率为 ±1 时，对称的两条直线斜率之积为 1。

## 八、长方体（正方体）

1、面对角线：$\sqrt{a^2 + b^2}, \sqrt{b^2 + ^2}, \sqrt{c^2 + a^2}$；

3、体对角线：$\sqrt{a^2 + b^2 + c^2}$；

4、侧面积：$S = 2(bc + ca)$；

4、全面积：$S_{全} = 2(ab + bc + ca)$；

5、体积：$V = abc$。

6 、

$$(\frac{棱长之和}{4})^2 = (体对角线)^2 + 表面积 \Leftrightarrow (a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$$

## 九、圆柱

1、侧面积：$S_{侧} = 2\pi RH$；

2、全面积：$S_{全} = 2\pi RH + 2\pi R^2$；

3、轴截面：$S = 2r \times h$，当 $2r = h$ 时，称圆柱为等边圆柱；

4、体积：$V = \pi R^2 H$。

## 十、 球柱

1、全面积：$S_{全} = 4\pi R^2$；

2、体积：$V = \dfrac{4}{3}\pi R^3$。

## 第七节 排列组合、概率

1、排列 $P_n^m = n(n-1)(n-2)\cdots[n-(m-1)]$ 。

2、全排列 $P_n^n = n(n-1)(n-2)\cdots 3\cdot 2\cdot 1 = n!$ ；

3、组合 $C_n^m = \dfrac{n(n-1)(n-2)\cdots[n-(m-1)]}{m!} = \dfrac{n!}{m!(n-m)!}$ 。

（1）$C_n^m = C_n^{n-m}$ ；

（2）$C_n^m = C_{n-1}^m + C_{n-1}^{m-1}$ ；

（3）二项式定理 $(a+b)^n = C_n^0 a^n + C_n^1 a^{n-1}b + \cdots + C_n^{n-1}ab^{n-1} + C_n^n b^n$ 。

展开式系数之间的关系

① $C_n^r = C_n^{n-r}$ ，即与首末等距的两相系数相等；

② $C_n^{\ 0} + C_n^{\ 1} + \cdots\cdots C_n^{\ n} = 2^n$ ，即展开式各项系数之和为 $2^n$ ；

③ $C_n^0 + C_n^2 + C_n^4 \ldots = C_n^1 + C_n^3 + C_n^5 \ldots = 2^{n-1}$ ，即奇数项系数和等于偶数项系数和。

4、$P(A+B) = P(A) + P(B) - P(AB)$ ；

$P(A+B+C) = P(A) + P(B) + P(C) - P(AB) - P(BC) - P(CA) + P(ABC)$ ；

5、$P(A) = 1 - P(\overline{A})$ ；

6、事件 $A,B$ 独立，则 $P(AB) = P(A)P(B)$ ；

7、至少有 1 个发生的概率=至多有 $n-1$ 个不发生的概率$=1-$全不发生的概率；

8、贝努力实验，$n$ 次试验中恰发生 $k$ 次的概率为 $C_n^k p^k (1-p)^{n-k}$ ；

第 $k$ 次成功发生在第 $n$ 次试验的概率为 $C_{n-1}^{k-1} p^k (1-p)^{n-k}$ 。

# 2020 年管理类联考逻辑串讲讲义

**逻辑做题基本原则**

逻辑试题不一样，容易中难要定夺

中等难度题最多，高难度题往后做

容易问题先完成，拿到分数最稳妥

遇题先把问题看，马虎丢分最难过

找真找假要分清，除了问法排除做

排列组合思维多，要想拿分需先做

形式逻辑套公式，切忌不要带生活

论证逻辑找论证，干扰选项要定夺

论点论据要相关，偷换概念最常见

中性选项不要选，逻辑高分可实现

# 第一式：假言命题

**题型 1（A 推出 B，同真就找逆否命题）**

1. 倪教授认为，我国工程技术领域可以考虑与国外先进技术合作，但任何涉及黑心技术的项目决不受制于人，我国许多网络安全建设项目涉及信息核心技术。如果全盘引进国外先进技术而不努力自主创新。我国的网络安全将会受到严重威胁。

根据倪教授的描述，可以得出以下哪项？

(A)我国有些网络安全建设项目不能受制于人。

(B)我国工程技术领域的所有项目都不能受制于人。

(C)如果能做到自主创新，我国的网络安全就不会受到严重威胁。

(D)如果我国网络完全没有受到严重威胁，那么一定没有全盘引进国外先进技术或者努力自主创新了。

(E)只要不是全盘引进国外先进技术，我国的网络安全就不会受到严重威胁。

2. 人民既是历史的创造者，也是历史的见证者;既是历史的"剧中人"，又是历史的"剧作者"。离开人民，文艺就会变成无根的浮萍、无病的呻吟、无魂的躯壳。关注人民的生活、命运、情感，表达人民的心愿、心情、心声，我们的作品才会人民中传之久远。

根据以上陈述，可以得出以下哪项？

A. 只有不离开人民，文艺才不会变成无根的浮萍、无病的呻吟、无魂的躯壳。

B. 历史的创造者都不是历史的"剧中人"。

C. 历史的创造者都是历史的见证者。

D. 历史的"剧中人"都是历史的"剧作者"。

E. 我们的作品只要表达人民的心愿、心情、心声，就会在人民中传之久远。

3. 国际足联一直坚称，世界杯冠军队所获得的"大力神"杯是实心的纯金奖杯，某教授经过精密测量和计算认为，世界杯冠军奖杯——实心的"大力神"杯不可能是纯金制成的，否则球员根本不可能将它举过头顶并随意挥舞。

以下哪项与这位教授的意思最为接近？

A. 若球员能够将"大力神"杯举过头顶并自由挥舞，则它很可能是空心的纯金杯。

B. 只有"大力神"杯是实心的，它可能是纯金的。

C. 若"大力神"杯是实心的纯金杯，则球员不可能把它举过头顶并随意挥舞。

D. 只有球员能够将"大力神"杯举过头顶并自由挥舞，它才由纯金制成，并且不是实心的。

E. 若"大力神"杯是由纯金制成，则它肯定是空心的。

**题型2（矛盾型，就找A且非B）**

3. 天下大雪，多条高速公路纷纷关闭，有些高速公路管理者认为，如果不关闭高速公路，就会发生重大交通事故，给人民生命财产带来巨大损失。但是，很多司机并不赞同这种做法。

以下哪项中的判断最可能是上述司机所要表达的意思？

（A）如果关闭高速公路，同样会发生重大交通事故。

（B）如果不关闭高速公路，就不会发生重大交通事故。

（C）关闭高速公路，但不发生重大交通事故。

（D）不关闭高速公路，但发生重大交通事故。

（E）不关闭高速公路，也不发生重大交通事故。

4. 只有具有一定文学造诣且具有生物学专业背景的人，才能读懂这篇文章。

如果上述命题为真，以下哪项不可能为真？

A. 小张没有读懂这篇文章，他但的文学造诣是大家所公认的。

B. 计算机专业的小王没有读懂这篇文章。

C. 从未接触过生物学知识的小李读懂了这篇文章。

D. 小周具有生物学专业背景，但他没有读懂这篇文章。

E. 生物学博士小赵读懂了这篇文章。

**题型3（真假话题，窍门：则换或）**

5. 逻辑老师对小张说：如果爱好数学，你就能迷上逻辑。

数学老师对小张说：只有爱好数学，你才能迷上逻辑。

小张说：我爱好数学，但没有迷上逻辑。

如果逻辑老师、数学老师、小张三人只有一人的陈述为真，则可推出哪项结论？

A．逻辑老师的断定为真，但小张并不爱好数学。

B．逻辑老师的断定为真，但小张并未迷上逻辑。

C．数学老师的断定为真，但小张并不爱好数学。

D．数学老师的断定为真，但小张并未迷上逻辑。

E．小张爱好数学，又迷上逻辑。

6.近日，某集团高层领导研究了发展方向问题。王总经理认为：既要发展纳米技术，也要发展生物医药技术；赵副总经理认为：只有发展智能技术，才能发展生物医药技术，李副总经理认为，如果发展纳米技术和生物医药技术，那么也要发展智能技术。最后经过董事会研究，只有其中一位的意见被采纳。

A．发展纳米技术和智能技术，但是不发展生物医药技术。

B．发展生物医药技术和纳米技术，但是不发展智能技术。

C．发展智能技术和生物医药技术，但是不发展纳米技术。

D．发展智能技术，但是不发展纳米技术和生物医药技术。

E．发展生物医药技术、智能技术和纳米技术。

7.某公司发生了纵火案。公安机关侦查确定，可以断定公司保安甲、乙、丙、丁中至少有一人是作案者。办案人员对四人进行了询问，四人的　回答如下：

甲："如果乙不是纵火犯，我也不是纵火犯。"

乙："丙是纵火犯，我不是"

丙："乙或者甲是纵火犯。"

丁："乙或者丙是纵火犯。"

后来事实表明，他们四人中只有一人说了真话。

根据以上陈述，以下哪项一定为假？

A.丙说的是假话。

B.B.丙不是纵火犯。

C.C.乙不是纵火犯。

D.丁说的是真话。

E.甲说的是真话。

**题型 4（结构类似：窍门，充分条件几种语言结构）**

8.经过反复核查，质检员小李向厂长汇报说："726 车间生产的产品都是合格的，所以不合格的产品都不是 726 车间生产的。"

以下哪项和小李的推理结构最为相似？

A．所有入场的考生都经过了体温测试，所以没有入场的考生都没有经过体温测试。

B．所有出厂设备都是检测合格的，所以检测合格的设备都已出厂。

C．所有已发表文章都是认真校对过的，所以认真校对过的文章都已发表。

D．所有真理都是不怕批评的，所以怕批评的都不是真理。

E．所有不及格的学生都没有好好复习，所以没好好复习的学生都不及格。

9.甲：己所不欲，勿施与人。乙：我反对。己所欲，则施于人。
以下哪项与上述对话最为相似？
(A)甲：人非草木，孰能无情？乙：我反对。草木无情，但人有情。
(B)甲：人不犯我，我不犯人。乙：我反对。人若犯我，我就犯人.
(C)甲：人无远虑，必有近忧。乙：我反对。人有远虑，亦有近忧。
(D)甲：不在其位，不谋其政。乙：我反对。在其位，则行其政。
(E)甲：不入虎穴，焉得虎子。乙：我反对。如得虎子，必入虎穴。

**题型 5（复杂充分条件分析思路）**

10.张立是一位单身白领，工作 5 年积累了一笔存款，由于该笔存款尚不足以购房，才考虑将其暂时分散投资到股票、黄金、基金、国债和外汇等 5 方面。该笔投资需要满足如下条件：
(1)如果黄金投资比例高于 1/2，则剩余部分投入国债和股票；
(2)如果股票投资比例低于 1/3，则剩余部分不能投入外汇或国债；
(3)如果外汇投资比例低于 4/1，则剩余部分投入基金或黄金；
(4)国债投资比例不能低于 1/6。
根据上述信息，可以得出以下哪项？
(A)国债投资比例高于 1/2
(B)外汇投资比例不低于 1/3
(C)股票投资比例不低于 1/4
(D)黄金投资比例不低于 1/5
(E)基金投资比例低于 1/6

11.在某次综合性学术年会上，物理学会作学术报告的人都来自高校；化学学会作学术报告的人有些来自高校，但是大部分来自中学；其他作学术报告者均来自科学院。来自高校的学术报告者都具有副教授以上职称，来自中学的学术报告者都具有中教高级以上职称。李默、张嘉参加了这次综合性学术年会，李默并非来自中学，张嘉并非来自高校。
以上陈述如果为真，可以得出以下哪项结论？
(A)张嘉如果作了学术报告，那么他不是物理学会的。
(B)李默不是化学学会的。
(C)李默如果作了学术报告，那么他不是化学学会的。
(D)张嘉不具有副教授以上职称。
(E)张嘉不是物理学会的。

# 第二式：联言选言

## （先否再肯一定真，先肯再否推不出）

12. 这两个《通知》或者属于规章或者属于规范性文件，任何人均无权依据这两个《通知》将本来属于当事人选择公证的事项规定为强制公证的事项。
根据以上信息，可以得出以下哪项？
（A）规章或者规范性文件既不是法律，也不是行政法规。
（B）规章或规范性文件或者不是法律，或者不是行政法规。
（C）这两个《通知》如果一个属于规章，那么另一个属于规范性文件。
（D）这两个《通知》如果都不属于规范性文件，那么就属于规章。
（E）将本来属于当事人选择公证的事项规定为强制公证的事项属于违法行为。

13. 地球孕育了生命，是人类的摇篮，但是现在地球生态环境问题日益严峻。科学家提出：人类或者立即采取行动解决现实或潜在的环境问题，或者转向外太空寻找新的宜居星球。
如果科学家的上述观点为真，那么以下哪项一定为假？
A. 人类寻找新的宜居星球，但不采取行动解决环境问题
B. 人类既不采取行动解决环境问题，又不寻找新的宜居星球
C. 人类不向外太空寻找宜居星球，但采取行动解决环境问题
D. 人类立即采取行动解决环境问题，并去寻找新的宜居星球
E. 以上各项都不一定为假

14. 现任中国男子足球队教练佩兰，曾在 2007/2008 赛季率领法国里昂队赢得法甲冠军和法国杯冠军，但随即出人意料地离开了这支球队。当时他的信条是：要么绝对信任，要么不干，没有中间路线。
以下哪项陈述最准确的表达了佩兰这一信条的意思？
A. 要干就必须得到绝对信任，否则不不干
B. 只有得到绝对信任才干，如果不干就是没有得到绝对信任
C. 只有得到绝对信任才干
D. 如果得到绝对信作就干
E. 绝对信任当且仅当不干

要么真或者必真，或者真要么不定
15. 某企业评选年度优秀中层干部，候选人是赵、钱、孙、李四位部门经理。四位评委有如下意见：
甲：赵经理和钱经理，至少要入选一位。
乙：四位经理都可入选。
丙：要么赵经理入选，要么钱经理入选。

丁：四位经理中有人不可入选。

由董事会最后确定的评选结果显示，上述四位老师的意见，两位被采纳，两位未被采纳。

如果上述断定为真，则以下哪项一定为真？

A．甲的意见被采纳。

B．乙的意见被采纳。

C．丙的意见被采纳。

D．丁的意见被采纳。

E．上述断定都不一定为真。

16. 对于汤姆来说，只要女儿玛丽高兴或者妻子琼斯满意，汤姆本人就快乐。但是圣诞节那一天，汤姆不快乐。

以下哪一项能够从汤姆不快乐中推出为真？

A．圣诞节这一天，玛丽高兴并且琼斯满意。

B．圣诞节这一天，玛丽高兴或者琼斯满意。

C．圣诞节这一天，玛丽不高兴并且琼斯满意。

D．圣诞节这一天，玛丽高兴或者琼斯不满意。

E．以上选项都不能推出为真。

# 第三式：性质命题

**题型 1：真假话题**

17. 期末考试前，张珊、李思、王五在一起猜测结果：

张珊：我们三人都能及格。

李思：王五能及格。

王五：李思的考分比我高。

考试结果说明，上述三个猜测，只有一个不成立。

如果上述断定为真，则以下哪项一定为真？

A．张珊的猜测成立。

B．李思的猜测成立。

C．王五的猜测成立。

D．李思期末考试及格。

E．李思期末考试不及格。

18. 学校在为失学儿童义捐活动中收到两笔没有署真名的捐款，经过多方查找，可以断定是周、吴、郑、王中的某两位捐的。经询问，周说："不是我捐的"；吴说："是王捐的"；郑说："是吴捐的"；王说："我肯定没有捐。" 最后经过详细调查证实四个人中只有两个人说的是真话。 根据已知条件，请你判断下列哪项可能为真？

A．是吴和王捐的。

B．是周和王捐的。

C．是郑和王捐的。

D．是郑和吴捐的。

E．是郑和周捐的。

## 题型 2（由一到多问题）

19.世界杯期间，法国足球队有的替补队员参与了罢训事件

如果上述断定为真，则以下哪项不能确定真假？（　　　）

Ⅰ．法国足球队的替补队员尼尔参与了罢训事件。

Ⅱ．法国足球队有的替补队员没有参与罢训事件。

Ⅲ．法国足球队全体队员都没有参与罢训事件。

Ⅳ．法国足球队没有任何替补队员不参与罢训事件。

A.仅Ⅰ。

B.仅Ⅰ、Ⅱ和Ⅲ。

C.仅Ⅰ、Ⅱ和Ⅳ。

D.仅Ⅲ。

E.Ⅰ、Ⅱ、Ⅲ和Ⅳ。

## 题型 3（直接利用矛盾判断真假）

20.任何法规都应当体现公正。但什么是公正，却有太多不同的标准，对于任何法规，总有人认为公正，也有人认为不公正。

如果上述断定为真，则以下哪项一定为假？

Ⅰ 有人认为所有的法规都是公正的。

Ⅱ 有的法规所有人都认为不公正。

Ⅲ 所有人都认为法规大多数是公正的。

A．只有Ⅰ。

B．只有Ⅱ。

C．只有Ⅲ。

D．只有Ⅰ和Ⅱ。

E．Ⅰ、Ⅱ和Ⅲ。

21.捐助希望工程的动机，大都是社会责任，但也有的是个人功利，当然，出于社会责任的行为，并不一定都不考虑个人功利。对希望工程的每一项捐款，都有是利国利民的善举。

如果以上陈述为真，则以下哪项不可能为真？

A 有的行为出于社会责任，但不是利国利民的善举

B 所有考虑个人功利的行为，都有不是利国利民的善举。

C 有的出于社会责任的行为是善举。

D 有的行为虽然不是出于社会责任，但却是善举。

E 对希望工程的有些捐助，既不是出于社会责任，也不是出于个人功利，而是有其他原因，例如服从某种摊派。

# 第四式：三段论

**基本规则：**

1.每个词出现两次

2.在一个正确的三段论中，中项至少说一次所有

3.两个否定前提推不出结论

4.两个特称推不出

5.如果前提中有一个是否定的，那么结论就是否定的，如果结论是否定的，那么前提中必有一个是否定的

6.如果前提中有一个是特称的，结论就是特称的

**题型 1：结构类似（3 要素）【1.中项位置，2.否定词及其位置，3.有无特称出现】**

22.所有向日葵都是向阳的，这棵植物是向阴的，所以这棵植物不是向日葵。

上述推理的形式结构与以下哪项最为类似？

A.所有职业短跑运动员都穿钉鞋，小李不是职业短跑运动员，所以小李不穿钉鞋

B.所有纳税人都有存款，这位姑娘有存款，所以这位姑娘是纳税人

C.所有法警都在法院工作，小王在法院工作，所以小王是法警

D.所有铅笔的外壳都是木头做的，这支笔是铝做的，所以这支笔不是铅笔

E.实词能独立充当句法成分，连词能独立充当句法成分，所以连词不是实词。

**题型 2：补充前提（用基本规则解题）**

23.所有的物质实体都有质量，任何有质量的东西都有能量。所以，科学理论不是物质实体。

如果假设以下哪项陈述，则可以逻辑地推出上文的结论？

(A)凡具有质量的东西都是物质实体。

(B)科学理论不具有质量也不具有能量。

(C)科学理论不具有质量

(D)没有任何具有能量的东西不具有质量。

(E)科学理论具有能量。

24.搞阴谋诡计的人不被人信任，所以正直的人不搞阴谋诡计。

得出以上结论必需的前提是：

A.正直的人被人信任

B.搞阴谋诡计的人不是正直的人

C.有的正直的人也搞阴谋诡计

D.有的搞阴谋诡计的人也被人信任

E.不搞阴谋诡计的人是正直的人

## 题型 3 结论推出

25.一个来自北京的旅游团在海南岛旅游，导游带他们去一家大型的水果市场。团队中凡是
买椰子的人都没有买木瓜。所有买芒果的人都没有买椰子。有些买鸡蛋果的人买了椰子。
有些买鸡蛋果的人买了木瓜。有些买鸡蛋果的人买了芒果。

如果以上陈述为真，根据这些陈述，以下哪项也一定是真的？

A 凡是没有买椰子的人都买了木瓜。

B 凡是没有买芒果的人都买了椰子。

C 有些买芒果的人没有买木瓜。

D 有些买木瓜的人既没有买芒果，也没有买鸡蛋果。

E 有些买鸡蛋果的人既没有买芒果，也没有买木瓜。

26.卫星旅行社面向美国、中国香港、中国台湾、新加坡等地的旅游者推出了中华环视旅行
活动。其中有些人游览中国西部，有些人游览中国东北，所有游览中国东北的人都游览中
国西部，而所有没有游览中国西部的人都是新加坡人。

上述陈述最能支持以下哪项结论？

A．有些新加坡人游览中国东北。

B．有些新加坡人游览中国西部。

C．所有的新加坡人都游览中国东北。

D．有些新加坡人没有游览中国东北。

E．有些游览中国西部的人没有游览中国东北。

# 第五式：模态命题

**题型 1．（负模态命题）**

27.有人认为"巨额的国家预算赤字必然会导致巨额的国家贸易逆差"，如果这样的话，那么世界上预算赤字最大的国家必然会有相应的最大的贸易逆差；但我们知道，世界上预算赤字最大的国家是美国，而美国的贸易总的来说是顺差而不是逆差(因为尽管其货物贸易亏本，但其技术和服务贸易却赚的非常多)。

　　由此可以推出

A.巨额的国家预算赤字必然不会导致巨额的国家贸易逆差

B.巨额的国家贸易逆差必然不会导致巨额的国家预算赤字

C.巨额的国家预算赤字可能不会导致巨额的国家贸易逆差

D.巨额的国家预算赤字可能会导致巨额的国家贸易逆差

E.居额的国家预算赤字不可能不会导致巨额的国家贸易逆差

**题型 2（负模态性质命题）**

28.并非任何战争都必然导致自然灾害，但不可能有不阻碍战争的自然灾害。以下哪一项与上述断定的含义最为接近？

A．有的战争可能不导致自然灾害，但任何自然灾害都可能阻碍战争

B．有的战争可能不导致自然灾害，但任何自然灾害都必然阻碍战争

C．任何战争都不可能导致自然灾害，但有的自然灾害可能阻碍战争

D．任何战争都可能不导致自然灾害，但有的自然灾害必然阻碍战争

E．有的战争必然导致自然灾害，但任何自然灾害都必然阻止战争

**题型 3（模态命题矛盾关系）**

29.火星上可能有生物。假设该命题为真，则下面哪个命题必然为假？

A.火星上可能没有生物

B.火星上也许有生物，也许没有生物

C. 火星上一定没有生物

D. 火星上一定有生物

E. 火星上不一定没有生物

# 第六式：排列组合

## 题型1：代入排除法解题

### 题干信息充分首选排除法（能排除尽量排除）

30. 王小红、叶小白、徐小橙三位同学在商店门口不期而遇。忽然，她们之中背着红色挎包的一个人说："真有趣，我们三个人的挎包，一个是白色的，一个是红色的，一个是橙色的，可是没有一个人的挎包的颜色与自己的名字所表示的颜色是相同的。"叶小白立即接着说："一点也不错!"

根据以上的条件，请判断下列哪项为真：

（A）王小红、叶小白、徐小橙的挎包的颜色分别是橙色、红色、白色的。

（B）王小红、叶小白、徐小橙的挎包的颜色分别是白色、红色、橙色的。

（C）王小红、叶小白、徐小橙的挎包的颜色分别是橙色、白色、红色的。

（D）王小红、叶小白、徐小橙的挎包的颜色分别是白色、橙色、红色的。

（E）王小红、叶小白、徐小橙的挎包的颜色分别是红色、橙色、白色的。

31. 某校图书馆新购一批文科图书。为方便读者查阅，管理人员对这批图书在文科新书阅览室中的摆放位置作出如下提示：

（1）前3排书橱均放有哲学类新书；

（2）法学类新书都放在第5排书橱，这牌输出的左侧也放有经济类新书；

（3）管理类新书放在最后一排书橱。

事实上，所有的图书都按照上述提示放置。根据提示，徐莉顺利找到了她想查阅的新书。

根据上述信息，以下哪项是不可能的？

A. 徐莉在第2排书橱中找到哲学类新书。

B. 徐莉在第3排书橱中找到经济类新书。

C. 徐莉在第4排书橱中找到哲学类新书。

D. 徐莉在第6排书橱中找到法学类新书。

E. 徐莉在第7排书橱中找到管理类新书

### 题干条件缺失（代入法）

32. 某著名风景区有"妙笔生花""猴子观海""仙人晒靴""美人梳妆""阳关三叠""禅心向天"等6个景点。为方便游人，景区提示如下：

(1)只有先游"猴子观海"，才能游"妙笔生花"

(2)只有先游"阳关三叠"，才能游"仙人晒靴"

(3)如果游玩"美人梳妆"就要先游"妙笔生花"

(4)"禅心向天"应第 4 个游览，之后才可游览"仙人晒靴"。

张先生按照上述提示，顺利游览了上述 6 个景点。

根据上述信息，关于张先生的游览顺序，以下哪项不可能为真？

(A)第一个游览"猴子观海"。

(B)第二个游览"阳关三叠"。

(C)第三个游览"美人梳妆"。

(D)第五个游览"妙笔生花"。

(E)第六个游览"仙人晒靴"。

32.甲、乙、丙、丁、戊和己等 6 人围坐在一张正六边形的小桌前，每边各坐一人。已知：

（1）甲与乙正面相对；

（2）丙与丁不相邻，也不正面相对。

如果己与乙不相邻，则以下哪项一定为真？

(A) 如果甲与戊相邻，则丁与己正面相对。

(B) 甲与丁相邻。

(C) 戊与己相邻。

(D) 如果丙与戊不相邻，则丙与己相邻。

(E) 己与乙正面相对。

## 信息太多（列表作图法）

33-34 基于以下题干

年初，为激励员工努力工作，某公司决定根据每月工作绩效评选"月度之星"，王某在当年前 10 个月恰好只在连续的 4 个月中当选月度之星，他的另三位同事郑某、吴某、周某也做到了这一点。关于这四人当选"月度之星"的月份，已知：

(1) 王某和郑某仅有三个月同时当选；

(2)郑某和吴某仅有三个月同时当选；

(3)王某和周某不曾在同一个月当选；

(4)仅有 2 人在 7 月同时当选；

(5)至少有 1 人在 1 月当选。

33.根据以上信息，王某当选月度之星的月份是（　　）

(A) 1～4 月

(B) 3~6 月

(C) 4~7 月

(D) 5～8 月

(E) 7~10 月

34.根据以上信息，有 3 人同时当选月度之星的月份是（　　）

(A) 1~3 月

(B) 2~4 月

(C) 3~5 月

(D) 4~6 月

(E) 5~7 月

35.某学校新来了三位年轻老师，蔡老师、朱老师、孙老师，他们每人分别教生物、物理、英语、政治、历史和数学六科中的两科课程。其中，三个人有以下关系：

①物理老师和政治老师是邻居；

②蔡老师在三人中年龄最小；

③孙老师、生物老师和政治老师三人经常一起从学校回家；

④生物老师比数学老师年龄要大些；

⑤在双休日，英语老师、数学老师和蔡老师三人经常一起打排球。根据以上条件，可以推出朱老师教（　）。

A．历史和生物

B．物理和数学

C．英语和生物

D．政治和数学

E．　英语和数学

# 第七式：削弱加强

## 因果倒置与因果没有倒置

36.某保险公司近来的一项研究表明：那些在舒适工作环境里工作的人比在不舒适工作环境里工作的人的生产效率要高 25%。这表明，日益改善的工作环境可以提高工人的生产率。

以下哪项为真，最能削弱上述论证？

A.平均来说,生产率低的员工每天在工作场所的时间比生产效率高的员工要少

B.舒适的环境比不舒适的环境更能激励员工努力工作

C.舒适的工作环境通常是对生产率高的员工的酬劳

D.在拥挤、不舒适的环境中,同事的压力妨碍员工的工作

E.工作环境不好的地方也有工人生产率高的

37.有位研究者发现,免疫系统活力低的人比免疫系统活力正常或者高的人在精神健康测试

中的得分要低得多。研究者从这个实验得出结论认为，免疫系统防御生理疾病，也防御精神疾病。

以下哪项是上述论证所必须假设的？

A．免疫系统活力高的人比免疫系统活力正常的人能更好地防御精神疾病。

B．精神疾病对身体系统的影响类似于生理疾病对它的影响。

C．免疫系统活力高的人不可能患精神疾病。

D．精神疾病不会导致人的免疫系统活力的降低。

E．对精神疾病的心理治疗不如医学治疗有效。

## 拆桥削弱与搭桥假设

38．人们通常认为，幸福能够增进健康、有利于长寿，而不幸福则是健康状况不佳的直接原因，但最近有研究人员对 3000 多人的生活状况调查后发现，幸福或者不幸福并不意味着死亡的风险会相应地变得更低或者更高，他们由此指出，疾病可能会导致不幸福，但不幸福本身并不会对健康状况造成损害。

以下哪项如果为真，是能质疑上述研究人员的论证？

(A)幸福是个体的一种心理体验，要求被调查对象准确判定其幸福程度有一定的难度。

(B)有些高寿老人的人生经历较为坎坷，他们有时过得并不幸福。

(C)有些患有重大疾病的人乐观向上，积极与疾病抗争，他们的幸福感比较高。

(D)人的死亡风险低并不意味着健康状况好，死亡风险高也不意味着健康状况差。

(E)少数个体死亡风险的高低难以进行准确评估。

39.张珊：不同于"刀"、"枪"、"箭"、"戟"，"之"、"乎"、"者"、"也"这些字无确定所指。

李思：我同意。因为"之"、"乎"、"者"、"也"这些字无意义，因此，应当在现代汉语中废止。以下哪项最可能是李思认为张珊的断定所蕴涵的意思？

A.除非一个字无意义，否则一定有确定所指。

B.如果一个字有确定所指，则它一定有意义。

C.如果一个字无确定所指，则应当在现代汉语中废止。

D.只有无确定所指的字，才应当在现代汉语中废止。

E.大多数的字都有确定所指。

有因无果与有因有果

40.近年来，越来越多的机器人被用于在战场上执行侦查、运输、拆弹等任务，甚至将来陷阵的都不再是人，而是形形色色的机器人。人类战争正在经历自核武器诞生以来最深刻的革命。有专家据此分析指出，机器人战争技术的出现可以使人类远离危险，更安全、更有效率地实现战争目标。

以下哪项如果为真，最能质疑上述专家的观点？

（A）现代人类掌控机器人，但未来机器人可能会掌控人类。

（B）机器人战争技术有助于摆脱以往大规模杀戮的血腥模式，从而让现代战争变得更为人道。

（C）掌握机器人战争技术的国家为数不多，将来战争的发生更为频繁也更为血腥。

（D）因不同国家之间军事科技实力的差距，机器人战争技术只会让部分国家远离危险。

（E）全球化时代的机器人战争技术要消耗更多资源，破坏生态环境。

41.有专家指出，我国城市规划缺少必要的气象论证，城市的高楼建得高耸而密集，阻碍了城市的通风循环。有关资料显示，近几年国内许多城市的平均风速已下降 10%。风速下降，意味着大气扩散能力减弱，导致大气污染物滞留时间延长，易形成雾霾天气和热岛效应。为此，有专家提出建立"城市风道"的设想，即在城市里制造几条畅通的通风走廊，让风在城市中更加自由地进出，促进城市空气的更新循环。

以下哪项如果为真，最能支持上述建立"城市风道"的设想？

（A）有风道但没有风，就会让城市风道成为无用的摆设。

（B）有些城市已拥有建立"城市风道"的天然基础。

（C）风从八方来，"城市风道"的设想过于主观和随意。

（D）城市风道不仅有利于"驱霾"，还有利于散热。

（E）城市风道形成的"穿街风"，对建筑物的安全影响不大。

反对方法与方法可行

42.纯种的蒙古奶牛一般每年产奶 400 升；如果蒙古奶牛与欧洲奶牛杂交，其后代一般每年可产 2700 升牛奶。为此，一个国际组织计划通过杂交的方式，帮助蒙古牧民提高其牛奶产量。以下哪项，如果为真，对该国际组织的计划提出了最严重的质疑？

A．并不是欧洲所有奶牛品种都可以成功地同蒙古奶牛杂交。

B．许多年轻的蒙古人认为饲养奶牛是一种很低贱的职业，因为它不如其他许多职业更有利可图。

C．蒙古地区的放牧条件只适于饲养当地品种的奶牛，不适合杂交奶牛生长。

D．许多欧洲奶牛品种每年产奶超过 2700 升。

E．杂交后，蒙古牧民牛奶产量较以前翻了三倍。

43.某学会召开的国家性学术会议，每次都收到近千篇的会议论文。为了保证大会交流论文的质量,学术会议组委会决定,每次只从会议论文中挑选出　10%的论文作为会议交流论文。学术会议组委会的决定最可能基于以下哪项假设？

A．每次提交的会议论文中总有一定比例的论文质量是有保证的。

B．今后每次收到的会议论文数量将不会有大的变化。

C．90%的会议论文达不到大会交流论文的质量。

D．学术会议组委会能够对论文质量作出准确判断。

E．学会有足够的经费保证这样的学术会议能继续举办下去。

## 他因削弱与排除他因

44.在村庄东西两块玉米地中，东面的地施过磷酸钙单质肥料，西面的地则没有。结果，东面的地亩产玉米 300 公斤，西面的地亩产仅 150 公斤。因此，东面的地比西面的地产量高的原因是由于使用了过磷酸钙单质肥料。

以下哪项为真，最能削弱上述论证？

A.给东面的地使用的是过磷酸钙的过期肥料。

B.北面的地使用过硫酸钾单质化肥，亩产玉米 220 公斤。

C.每块地种植了不同种类的四种玉米。

D.两块低的田间管理无明显不同。

E.东面和西面两块地的土质不同。

45.对常兴市 23 家老人院的一项评估显示，爱慈老人院在疾病治疗水平方面受到的评价相当低，而在其他不少方面评价不错。虽然各老人院的规模大致相当，但爱慈老人院医生与住院老人的比率在常兴市的老人院中几乎是最小的。因此，医生数量不足是造成爱慈老人院在疾病治疗水平方面评价低的原因。

以下哪项如果为真，最能加强上述论证？

A. 和祥老人院也在常兴市，对其疾病治疗水平的评价比爱慈老人院还要低

B. 爱慈老人院的医务护理人员比常兴市其他老人院都要多

C. 爱慈老人院的医生发表的相关学术文章很少

D. 爱慈老人院位于常兴市的市郊

E. 爱慈老人院某些医生的医术一般

## 无因有果与无因无果

46. 公司自去年初开始实施一项"办公用品节俭计划"，每位员工每月只能免费领用限量的纸笔等各类办公用品。年末统计时发现，公司用于各类办公用品的支出较上年度下降了30%。在未实施该计划的过去 5 年时间，公司年均消耗办公用品 10 万元。公司总经理由此得出：该计划去年已经为公司节约了不少经费。

以下哪项如果为真，最能构成对总经理推论的质疑？

A. 另一家与该公司规模及其他基本情况均类似的公司，未实施类似的节俭计划，但在过去的 5 年间办公用品人均消耗额越来越低。

B. 去年，该公司在员工困难补助、交通津贴等方面的开支增加了 3 万元。

C. 另一家与该公司规模及其他基本情况均类似的公司，未实施类似的节俭计划，在过去的 5 年间办公用品消耗年均也为 10 万元。

D. 在过去的 5 年间，该公司大力推广无纸化办公，并且取得很大成效。

E. "办公用品节俭计划"是控制支出的重要手段，但说"该计划为公司一年内节约不少经费"，没有严谨的数据分析。

47. 19 世纪，英国城市人口增加而农村人口下降。一位历史学家推理说，这种变化并不是因为工业化，而是由于人口向城市地区的一系列迁移，每次迁移都伴随有农业经济的衰退。为证实这个假说，这位历史学家打算比较经济数据与人口普查数据。下面哪项如果正确，最能支持这位历史学家的假说？
A. 在工业经济增长最快的时期，农村人口也相对减少。
B. 当农业经济最萧条的时候，整个人口增长也减慢了。
C. 当农业经济相对强劲、工业经济不景气的时候，农村人口会急剧下降。
D. 当农业经济最强劲的时候，城市人口增长较慢。
E. 当工、农业经济都比较好的时候，城市人口增长较快。

比例关系削弱

48. 对某高校本科生的某项调查统计发现：在因成绩优异被推荐免试攻读硕士研究生的文科专业学生中，女生占有 70%，由此可见，该校本科生专业的女生比男生优秀。

　　以下哪项如果为真，能最有力地削弱上述结论？

A. 在该校本科生专业学生中，女生占 30%以上

B. 在该校本科生专业学生中，女生占 30%以下

C. 在该校本科生专业学生中，男生占 30%以下

D. 在该校本科生专业学生中，女生占 70%以下

E. 在该校本科生专业学生中，男生占 70%以上

49. 根据最近一项调查显示,近年来在某市外资企业高收人(指合法收入为年薪 12 万元在上)人群中，外国留学归来的人(简称"海归派")数占 60%以上，这充分说明国内大学毕业的人(简称"本土派")在该市外资企业中获得高工资极为困难。

　　以下哪项，如果为真，最能加强上述结论？

A. 在该市外资企业中，"本土派"人数占 40%

B. 在该市外资企业中，"本土派"人数超过 50%

C. 在该市就业的人群中，"海归派"仅为"本土派"的 10%

D. 在该市就业的人群中，"海归派"与"本土派"的人数比例约为 6：4

E. 在该市外资企业中，"海归派"人数超过 60%。

# 第八式：解释论证

50. 在美国与西班牙作战期间,美国海军曾经广为散发海报,招募兵源。当时最有名的一情售军广告是这样说的:美国海军的死亡率比纽约市民还要低。海军的官员具体就这个广告释说："根据统计,现在纽约市民的死亡率是每千人有 16 人,而尽管是战时,美国海军士的死亡率也不过每千人只有 9 人。"

如果以上资料为真,则以下哪项最能解释上述这种看起来很让人怀疑的结论？

A. 在战争期间,海军士兵的死亡率要低于陆军士兵。

B. 在纽约市民中包括生存能力较差的婴儿和老人。

C. 敌军打击美国海军的手段和途径没有打击普通市民的手段和途径多。

D. 美国海军的这种宣传主要是为了鼓动入伍,所以,要考虑其中夸张的成分。

E. 尽管是战时,纽约的犯罪仍然很猖獗报纸的头条不时地有暴力和色情的报道。

51. 一般商品只有在多次流通过程中才能不断增值，但艺术品作为一种特殊商品却体现出了与一般商品不同的特性。在拍卖市场上，有些古玩、字画的成交价有很大的随机性，往往会直接受到拍卖现场气氛、竞价激烈程度、买家心理变化等偶然因素的影响，成交价又是会高于底价几十倍乃至数百倍，使得艺术品在一次"流通"中实现大幅度增值。

以下哪项最无助于解释上述现象？

A 艺术品的不可再造型决定了其交换价格有可能超过其自身价值。

B 不少买家喜好收藏，抬高了艺术品的交易价格。

C 有些买家就是为了炒作艺术品，以期获得高额利润。

D 虽然大量赝品充斥市场，但是对艺术品的交易价格没有什么影响。

E 国外资金进入艺术拍卖市场，对价格攀升起到了拉动作用。


52. 几乎没有动物能受得住撒哈拉沙漠中午的高温，只有一种动物是例外，那就是银蚁。银蚁选择这个时段离开巢穴，在烈日下寻找食物，通常是被晒死动物的尸体。当然，银蚁也必须非常小心，弄得不好，自己也会成为高温下的牺牲品。

以下哪项最无助于解释银蚁为什么要选择中午时段觅食？

A．银蚁靠辨别自身分泌的信息素返回巢穴，这种信息素即使在烈日下也不会挥发。

B．随着下午气温的下降，剩下的动物尸体很快会被其他觅食动物搬走。

C．银蚁的天敌食蚁兽在中午的烈日下不会出现。

D．中午银蚁巢穴中的气温比地表更高。

E．银蚁辨别外界信息的能力在中午最为灵敏。


# 第九式：结论推出


**原则1：从弱原则**

53 一般将缅甸所产的经过风化或经河水搬运至河谷，河床中翡翠大砾石，称为"老坑玉"。老坑玉的特点是"水头好"，质坚，透明度高，其上品透明如玻璃，故称"玻璃种"或"冰种"。同为老坑玉，其质量相对也有高低之分，有的透明度高一些，有的透明度稍差些，所以价值也有差别。在其他条件都相同的情况下，透明度高的老坑玉比透明度较其低的单位

价值高，但是开采的实践告诉人们，没有单位价值最高的老坑玉。

以上陈述如果为真，可以得出以下哪项结论？

（A）没有透明度最高的老坑玉

（B）透明度高的老坑玉未必"水头好"

（C）"新坑玉"钟也有质量很好的翡翠

（D）老坑玉的单位价值还决定于其加工的质量

（E）随着年代的增加，老坑玉的单位价值会越来越高

54.好莱坞恐怖片中有两种常见的类型。一种是描写病态科学家所做的灾难性实验，另一种是描写鬼怪例如吸血鬼。在有些描写鬼怪的好莱坞恐怖片中，编导表达了这样一种意思，比鬼怪更可怕的是人自身的心理错乱。而在描写病态科学家的好莱坞恐怖片中，编导通常想表达的意思是，不要高估科学的正能量，也不要低估科学的负能量。尽管有这些不同，这两类好莱坞恐怖片的共同特点是都描写在现实中不可能出现的违反自然规律的现象，并且极力造成观众的恐惧。

    如果上述断定为真，则以下哪项一定为真？

A．所有对鬼怪的描写都违反自然规律。

B．影片描写违反自然规律现象的目的，都是为了造成观众的恐惧。

C．不论何种类型，好莱坞恐怖片通常都塑造心理错乱的角色。

D．大多数描写病态科学家的好莱坞影片都表达了编导的反科学立场。

E．有些描写病态科学家的影片描写了违反自然规律的现象。

## 原则 2：贴近原则

55.理论上说，模拟系统比数字系统先进。在纯模拟系统中，一个信号可以无限制地细化，而数字系统不可能得出比其数字单位所能表达的更精确信号。但是，此种理论上的优点也带来实践上的短处。在模拟系统中，初始信号的每一步细化都对初始信号有极细微的改变，因为此种细化没有限制，因此，此种一开始微不足道的"杂音"，通过无限制地积累，就可以把初始信号所包含的信息变得面目全非

    如果上述断定为真，最能支持以下哪项结论？

A．有些想法在理论上说得通，但在实践中无法操作。

B．对初始信号的细化，数字系统得出的结果比模拟系统更可靠。

C．信息的模拟表达是不可取的，因为我们不需要无限制细化的信息。

D．尽管有某些缺点，但模拟系统不仅在理论上，而且在实际运用中还是比数字系统先进。

E．如果信号要复制的次数非常多，使用数字系统比模拟系统更可靠。

## 整体原则

56 纯种赛马是昂贵的商品。一种由遗传缺陷引起的疾病威胁着纯种赛马，使它们轻则丧失赛跑能力，重则瘫痪甚至死亡。因此，赛马饲养者认为，一旦发现有此种缺陷的赛马应停止饲养。这种看法是片面的。因为一般地说，此种疾病可以通过饮食和医疗加以控制。另外，有此种遗传缺陷的赛马往往特别美，这正是马术表演特别看重的。

以下哪项最为准确地概括了题干所要论证的结论？

A．美观的外表对于赛马来说特别重要。

B．有遗传缺陷的赛马不一定丧失比赛能力。

C．不应当绝对禁止饲养有遗传缺陷的赛马。

D．一些有遗传缺陷的赛马的疾病未得到控制，是由于缺乏合理的饮食或必要的医疗。

E．遗传疾病虽然是先天的，但其病变可以通过后天的人为措施加以控制。

# 第十式：评价题

## 论证有效性

57 根据最近一次调查，婚姻使人变胖。作为证据的是一项调查结果：在 10 年的婚姻生活中，女性平均胖了 23 斤，男性平均胖了 18 斤。 对下列哪一个问题的回答可能对评价上面调查中所展现的推理最有帮助

A．为什么调查中研究的时间是 10 年，而不是 8 年或 12 年

B．在结婚的时间里，有一些男性体重增加少于 18 斤吗

C．与调查中的有可比较年龄的单身汉在 10 年中的体重增加或减少了多少

D．调查中的女性和调查中的男性在调查中一样积极吗

E．报道中的体重获得将维持一生吗

**论证焦点**

58. 王研究员：我国政府提出的"大众创新，万众创新"，激励着每一个创业者。对于创业者来说，最重要的是需要坚持精神。不管创业中遇到什么困难，都要坚持下去。

李教授：对于创业者来说，最重要的额是要敢于尝试新技术。因为有些新技术一些大公司不敢轻易尝试，这就为创业者带来成功的契机。

根据以上信息，以下哪项最准确地指出了王研究员与李教授的分歧所在？

(A)最重要的是敢于迎接各种创业难题的挑战，还是敢于尝试哪些大公司不敢轻易尝试的新技术。

(B)最重要的是坚持创业，有毅力有恒心把事业一直做下去，还是坚持创新，做出更多的科学发现的和技术发明。

(C)最重要的是坚持把创业这件事做好，成为创业大众的一员，还是努力发明新技术，成创新万众的一员。

(D)最重要的是需要一种坚持精神，不畏艰难，还是要敢于尝试新技术，把握事业成功契机。

(E)最重要的是坚持创业，敢于成立小公司，还是尝试新技术，敢于挑战大公司。

**逻辑错误、漏洞**

59. 公达律师事务所以为刑事案件的被告进行有效辩护而著称，成功率达 90%以上。老余是一位以专门为离婚案件的当事人成功辩护而著称的律师。因此，老余不可能是公达律师事务所的成员。

以下哪项最为确切地指出了上述论证的漏洞？

（A）公达律师事务所具有的特征，其成员不一定具有。

（B）没有确切指出老余为离婚案件的当事人辩护的成功率。

（C）没有确切指出老余为刑事案件的当事人辩护的成功率。

（D）没有提供公达律师事务所统计数据的来源。

（E）老余具有的特征，其所在工作单位不一定具有。

60. 居民苏女士在菜市场看到某摊位出售的鹌鹑蛋色泽新鲜、形态圆润，且价格便宜，于是买了一箱。回家后发现有些鹌鹑蛋打不破，甚至丢到地上也摔不坏，再细闻已经打破的鹌鹑蛋，有一股刺鼻的消毒液味道。她投诉至菜市场管理部门，结果一位工作人员声称鹌鹑蛋目前还没有国家质量标准，无法判定他有质量问题，所以他坚持这箱鹌鹑蛋没有质

量问题。

以下哪项与该工作人员做出结论的方式最为相似？

A.不能证明宇宙是没有边际的，所以宇宙是有边际的。

B"驴友论坛"还没有论坛规范，所以管理人员没有权利删除帖子。

C 小偷在逃跑途中跳入 2 米深的河中，事主认为没有责任，因此不予施救。

D 并非外星人不存在，所以外星人存在。

E 慈善晚会上的假唱行为不属于商业管理范围，因此相关部门无法对此进行处罚。


61. 主持人:有网友称你为国学巫师，也有网友称你为国学大师。你认为哪个名称更适合你？

上述提问中的不当也存在于以下各项中，除了

A．你要社会主义的低速度，还是资本主义的高速度？

B．你主张为了发展可以牺牲环境，还是主张宁可不发展也不能破坏环境？

C．你认为人都自私，还是认为人都不自私？

D．你认为"9·11"恐怖袭击必然发生，还是认为有可能避免？

E．你认为中国队必然夺冠，还是认为不可能夺冠？


# 实用技巧即易错分析


## 形式逻辑（启动项）

1.某市已开通运营 1234 号地铁线路。各条地铁线每一站运行加停靠所需时间均彼此相同。小张，小王，小李三人是同一单位的职工，单位附近有北口地铁站。某天早晨，三人同时都在长青站成一号线上来，但三人关于乘车路线的想法不尽相同，已知：

(1)如果一号线拥挤，小张就坐 2 站转三号线，再坐 3 站到北口站。如果一号线不拥挤，小张就坐 3 站后转二号线，再坐 4 站到北口站。

(2)只有 1 号线拥挤，小王才坐 2 站后转三号线，再坐 3 站到北口站。

(3)如果一号线不拥挤，小李就坐 4 站后转四号线，坐 3 站之后再转三号线，坐 1 站到达北口站。

(4)该天早晨地铁一号线不拥挤

假定三人换乘及步行总时间相同，则以下哪项最可能与上述信息不一致？

A. 小王和小李同时到达单位。

B. 小张和小王同时到达单位。

C. 小王比小李先到达单位。

D. 小李比小张先到达单位。

E. 小张比小王先到达单位。

2. 一江南园林拟建松、竹、梅、兰、菊五个园子。该园林拟设东南北三个门，分别位于其中的三个园子。这五个园子的布局满足如下条件：

(1)如果东门位于松园和菊园，那么南门不位于竹园。

(2)如果南门不位于竹园，那么北门不位于兰园。

(3)如果菊园在园林的中心，那么它与兰园不相邻。

(4)兰园与菊园相邻，中间连着一座美丽的廊桥。

根据以上信息，可以得出以下哪项？

A. 兰园不在园林的中心

B. 菊园不在园林的中心

C. 兰园在园林的中心

D. 菊园在园林的中心

E. 梅园不在园林的中心

**易错项**

3. 为防御电脑受到病毒侵袭，研究人员开发了防御病毒，查杀病毒的程序，前者启动后能使程序运行免受病毒侵袭，后者启动后能迅速查杀电脑中可能存在的病毒，某台电脑上现装有甲、乙、丙三种程序，已知：

(1) 甲程序能查杀目前已知的所有病毒

(2) 若乙程序不能防御已知的一号病毒，则丙程序也不能查杀该病毒

(3) 只有丙程序能防御已知的一号病毒，电脑才能查杀目前已知的所有病毒

(4) 只有启动甲程序，才能启动丙程序

根据上述信息，可以得出以下哪项？

(A) 如果启动了丙程序，就能防御并查杀一号病毒。

(B) 如果启动了乙程序，那么不必启动丙程序也能查杀一号病毒

(C) 只有启动了乙程序，才能防御并查杀一号病毒

(D) 只有启动丙程序，才能防御并查杀一号病毒

(E) 如果启动了甲程序，那么不必启动乙程序也能查杀所有病毒

4. 所有值得拥有专利的产品或设计方案都是创新，但并不是每一种创新都值得拥有专利，所有的模仿都不是创新，但并非每一个模仿者都应该受到惩罚。

　　　　根据以上陈述，以下哪项是不可能的?

A. 有些值得拥有专利的创新产品并没有申请专利。

B. 有些创新者可能受到惩罚。

C. 有些值得拥有专利的产品是模仿。

D. 没有模仿值得拥有专利。

E. 所有的模仿者都受到了惩罚。

# 论证逻辑技巧（贴近题干最优）

5. 针对癌症患者，医生常采用化疗手段将药物直接注入人体杀死癌细胞，但这也可能将正常细胞和免疫细胞一同杀灭，产生较强的副作用。近来，有科学家发现，黄金纳米粒子很容易被人体癌细胞吸收，如果将其包上一层化疗药物，就可作为"运输工具"，将化疗药物准确地投放到癌细胞中。他们由此断言，微小的黄金纳米粒子能提升癌症化疗的效果，并能降低化疗的副作用。

以下哪项如果为真，能支持上述科学家做出的论断?

(A) 黄金纳米粒子用于癌症化疗的疗效有待于大量临床检验。

(B) 在体外用红外线加热已进入癌细胞的黄金纳米粒子，可以从内部杀灭癌细胞。

(C) 因为黄金所具有的特殊化学性质，黄金纳米粒子不会与人体细胞发生反应。

(D) 现代医学手段已能实现黄金纳米粒子的精准投送，让其携带大的化疗药物制作用于癌细胞，并不伤及其他细胞。

(E) 利用常规计算机断层扫描，医生容易判定黄金纳米粒子是否已经投放到癌细胞中。

6. 人们通常认为，幸福能够增进健康、有利于长寿，而不幸福则是健康状况不佳的直接原

因，但最近有研究人员对 3000 多人的生活状况调查后发现，幸福或者不幸福并不意味着死亡的风险会相应地变得更低或者更高，他们由此指出，疾病可能会导致不幸福，但不幸福本身并不会对健康状况造成损害。

以下哪项如果为真，是能质疑上述研究人员的论证？

(A)幸福是个体的一种心理体验，要求被调查对象准确判定其幸福程度有一定的难度。

(B)有些高寿老人的人生经历较为坎坷，他们有时过得并不幸福。

(C)有些患有重大疾病的人乐观向上，积极与疾病抗争，他们的幸福感比较高。

(D)人的死亡风险低并不意味着健康状况好，死亡风险高也不意味着健康状况差。

(E)少数个体死亡风险的高低难以进行准确评估。

## 易错项一：偷换概念或者概念含混

7.研究人员发现，人类存在 3 种核甘酸基因类型，AA 型、AG 型以及 GG 型。一个人有 36% 的几率是 AA 型，有 48%的几率是 AG 型，有 16%的几率是 GG 型。在 1200 名参与实验的老年人中，拥有 AA 型和 AG 型基因类型的人都在上午 11 时之前去世，而拥有 GG 型基因类型的人几乎都在下午 6 时左右去世。研究人员据此认为：GG 型基因类型的人会比其他人平均晚死 7 个小时。

以下哪项如果为真，最能质疑上述研究人员的观点？

(A)对人死亡时间的比较，比一天中的哪一时刻更重要的是哪一年、哪一天。

(B)当死亡临近的时候，人体会还原到一种更加自然的生理节律感应阶段。

(C)有些人是因为疾病或者意外事故等其他因素而死亡的。

(D)平均寿命的计算依据应是实验对象的生命存续长度，而不是实验对象的死亡时间。

(E)拥有 GG 型基因类型的实验对象容易患上心血管疾病。

## 易错项二：过度推理

8.分心驾驶是指驾驶人满足自己身体舒适、心情愉悦等需求，而没有将注意力全部集中于驾驶过程的驾驶行为，常见的分析行为有抽烟饮水、进食聊天、使用手机、照顾小孩儿等。某专家指出，分心驾驶已成为我国道路交通事故的罪魁祸首。

　　以下哪项如果为真最能支持上述专家的观点？

A.一项统计表明，相对于酒驾、药驾、超速驾驶、疲劳驾驶等情形，我国由分心驾驶导致的交通事故占比最高。

B. 驾驶人正常驾驶时反应速度为 0.3-1 秒，使用手机时反应时间则延迟 3 倍左右。

C. 开车时使用手机会导致驾驶人注意力下降 20%，如果驾驶人边开车边发短信，则发生车祸的概率是其正常驾驶时的 23 倍。

D. 近来使用手机已成为我国驾驶人分心驾驶的主要表现形式，59%的人开车过程中开微信，31%的人玩自拍，36%的人刷微博、微信朋友圈。

E. 一项研究表明，在美国超过 1/4 的车祸是由驾驶人使用手机引起的。


**易错项三：中性选项**

9. 离家 300 米的学校不能上，却被安排到 2 公里以外的学校就读，某市一位适龄儿童在上小学时就遇到了所在区教育局这样的安排，而这一安排是区教育局根据儿童户籍所在施教区做出的，根据市教育局关规定的"就近入学原则"，儿童家长将区教育局告上法院，要求撤销原来安排，让其孩子就近入学，法院对此作出一审判决，驳回原告要求。

下列哪项最可能是法院的合理依据？

(A)"就近入学"不是"最近入学"，不能将儿童户籍地和学校的直线距离作为划分施教区的唯一依据。

(B)按照特定的地理要素划分，施教区中的每所小学不一定就处于该施教区的中心位置。

(C)儿童入学研究应上哪一所学校不是让适龄儿童或其家长自主选择，而是要听从政府主管部门的行政安排。

(D)"就近入学"仅仅是一个需要遵循的总体原则，儿童具体入学安排还得根据特定的情况加以变通。

(E)该区教育局划分施教区的行政行为符合法律规定，而原告孩子户籍所在施教区的确需要去离家 2 公里以外的学校就读。

# 2020 年管理类联考中文写作串讲讲义

## 第一部分：论证有效性分析

### 一、论证有效性分析冲刺任务

| | 五类文（10 分以下） | 四类文（10-15） | 三类文（16-19） | 二类文（20-24） | 一类文（25-30） |
|---|---|---|---|---|---|
| **扣分依据** | 文体形式不对，字数严重不够，分析与材料无关，胡乱凑数，缺少分析。 | 或者为答题而答题；或者不能理解材料，模板式作文；或者抓不住材料主要缺陷；或者分析较混乱，理由牵强，单薄无力。或者语句不通。 | 或者没能理解材料主线，抓不出主要缺陷；或者是采点分析，为点而分析，与材料主题无关；或者一两点分析虽充分，但不稳定，总有分析段蜻蜓点水，理由一般；或者段落层次不清。 | 或者某点分析欠缺，或者分析时理由普遍简单，或者某分析点并非主要缺陷；或者语句还有瑕疵。 | 整体性，流畅性，可读性，一致性，一贯性，稳定性，是否都做到面面俱到，让人佩服。 |
| **写作畏惧者**（考作文是此生最不愿直面的宿命。思路混乱，语句不通。缺少章法，缺乏自信） | 按应试规则写作，上过一天课即可避免落入此列。 | 先解决阅读理解，读懂材料。先找得出缺陷，先能给出一两个理由。至少有一个理由说在点子上。多听课，可以把一题写了老师改，改了再反复写到最佳为止。写上 2-3 篇达到此类文。 | 在四类文的基础上，逐步加强分析段，每一处缺陷能稳定地分析出两到三个理由。其中至少一两个理由一针见血，见血封喉。写上 5-7 篇达到此类文。 | 三类文的基础上，把分析语言精炼一些、书面一些、规范一些。分析点尽可能说得出三个理由来。一句话：加强思辨能力训练。写 10 篇以上或达到此类文。 | 一类文咱就不要奢望了。打好前面基本功，运气来了自然会有一类文。 |
| **写作被动者**（不反感，不主动。喜欢套模板，喜欢走捷径） | 按应试规则写作，上过一天课即可避免落入此列。 | 先解决学习态度，把被动学习转变为主动。在学习中找到乐趣，在成就中找到自信，在写作中成为自然。写上 1 篇理应超越此类文。 | 这类学生只要认真学习加写作，起步一般会在这一阶段。毕竟有一些思辨能力。写上 2-3 篇达到此类文。 | 在三类文的基础上，形成良好的写作习惯，专业的写作语言，稳定的分析能力。每点都能分析透彻，均衡。写上 6-10 篇或达到此类文。 | 具备冲击一类文的可能。前提是先长期稳定在二类文水准上。还能应对超难题，即超过真题难度的题。写上 15 篇以上或达到此类文。 |
| **写作达人**（爱写，能写。出色的文艺青年，出众的意见领袖） | 按应试规则写作，上过一天课即可避免落入此列。 | 文艺青年，爱好写作，能言善辩。只需熟悉文体，熟悉论证有效性分析的语言风格。写 1 篇或能超越此类文。 | 此类同学按理上来应该是三类文起步。但容易骄傲，自以为是，听课不认真。按自己的风格写作，无视阅卷者。 | 多吃点亏，多承受几次无视文体规则，无视阅卷者的代价。写上 3-5 篇吃过亏或能进入二类文。 | 一类文是这类同学的目标。需要面面俱到，每个分析点均衡，稳定。能轻松应对超越真题的题。写上 10 篇以上或达到此类文。 |

## 二、　老师写作思维导图之论证有效性分析
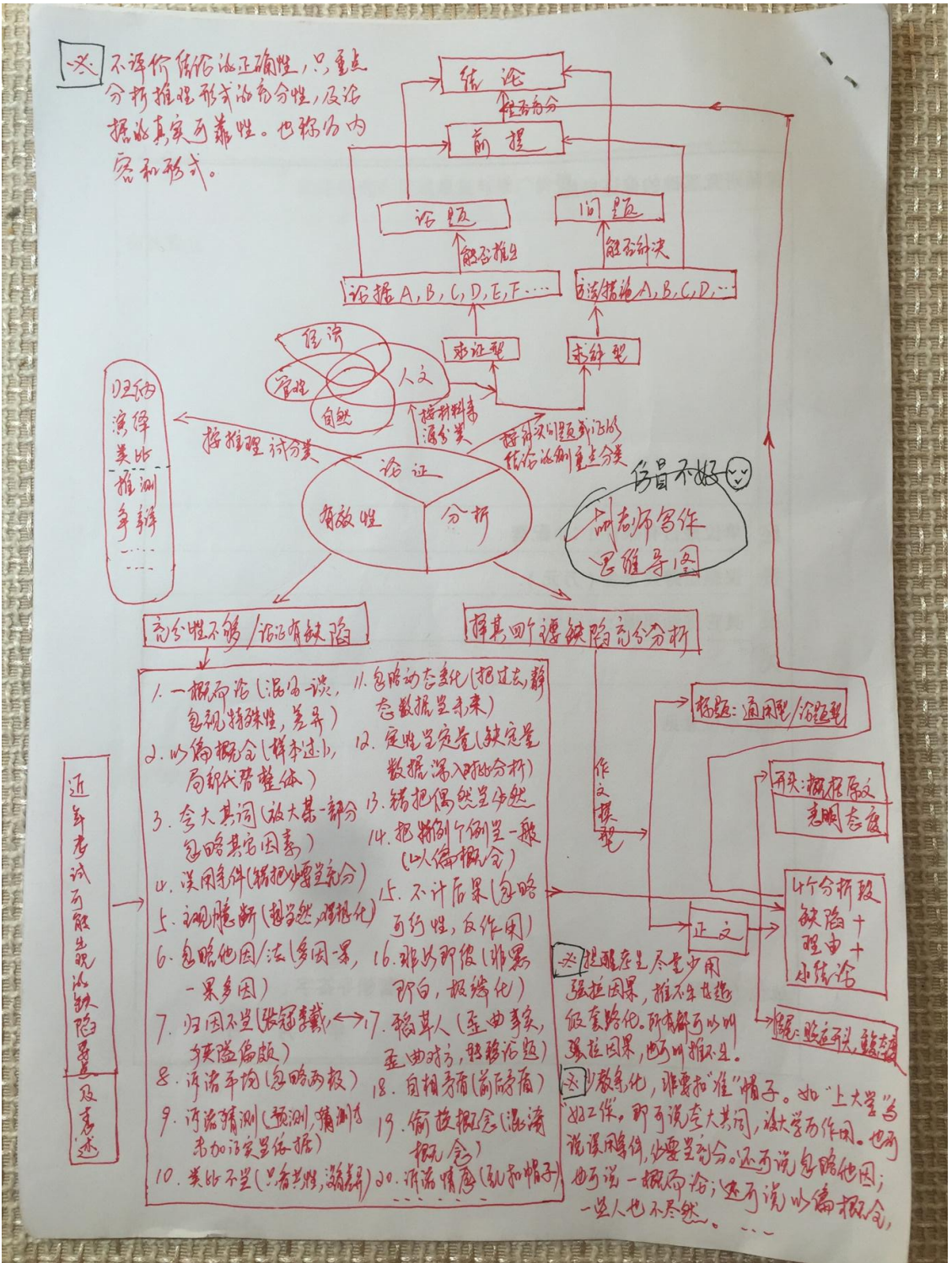
**三、四大应试锦囊，核心要点（现场笔记）：**

1、或推或解理乱麻；

2、一缺三理得天下；

3、因果不是唯一化；

4、花拳秀腿怼死它。

**四、两篇常用写作程式升级版（花拳秀腿砸死它）**

**1、作文模型升级版（现场笔记）**

**2、求证型写作程式**

**【秘笈】**

1、模板的作用：①帮你入门；②规范语言；③反模板个性化（面授班面授机宜）。

2、不要迷信模板，会用之后迅速变成自己的。自己整理自己的模板。切勿和全国考生雷同。雷同卷超危险！

**【精要】**

**模版一（求证型）**

**大论题：论题 P（proposition），记为 P1、P2 等**

**论据：论据 E(evidence)，如果是一组则记为 E1、E2、E3、E4、E5 等**

<div align="center">

**不充分的论证**

</div>

作者认为 P，该论证略有不足，不妨与作者探讨如下：

其一、由 E1 未必一定推出 P 或 P1（P 是大论点，P1 是论据 P 中的小结论），或有**以偏概全**之嫌。E1 很难充分代表 P 或 P1，其它 D（**领域、区域**）的状况很难说和该 E1 完全一致。就算其它 D 如此，也很难证明 P 或 P1 就如此。作者甚至还忽略了 E6 和 E7（**其它因素**）**也会可能导致同样的结果。**

其二、作者想用 E2（**预测、假设、猜想、推测**）来说明 P 或 P2（**P 是大论点，P2 是论据 P 中的小结论**），且不说 E2 不足以说明 P 或 P1，作者或忽略了 E2 **等**也会动态发展。并且，E8 也可能会影响或改变 P。

其三、E3 不一定能推出 P 或 P2（P 是大论点，P2 是论据 E3 中的小结论），且不说作者缺少核心数据作深入对比分析，很难将其一概而论。其它**什么、什么方面**或也能造成这样结果。再则，**更多……**

其四、E4 与 P 很难说有直接关系，作者或误用了条件关系。E4 即非 P 的充分条件，也很说是必要条件。作者或夸大了 E4 的作用。同时，**更多……**

通过以上分析，不难发现，仅从作者这些论据，很难充分说明 P 之论题，仍需更充分地论证。

**3、求解型写作程式**

**模版二（求解型）**
**要解决的问题：M（matter），记为  M1、M2、M3 等**
**措施或方法：W（way），记为 W1、W2、W3、W4、W5 等**

<div align="center">

**不全面的措施（方法）**

</div>

作者想用 W1、W2、W3 等来解决 M1、M2 等问题，该（**这些**）措施略有不足，不妨与作者探讨如下：

其一、作者想用 W1 来解决 M1，作者或夸大了 W1 的作用。且不说有了 W1 就一定能解决好 M1，就算该方法有效是否还需其它 **XYZ 等**措施配套使用。再则，作者还忽视了 **W1 的（代价、成本、可操作性、可执行性）等**，**更多……**

其二、M1 也许并不必然发生（**存在**），作者忽略了 M1 也可能会动态发展，未来 H 或影响到 M1。既然 M1 不会发生，盲目用 W1、W2 等方法来解决 M1、M2 难免于多此一举。再则，就算真的发生，用此措施也难说就立竿见影。

其三、盲目照搬 W3、W4 解决 M1、M2，**领域（国情、区域等）**不同。作者未考虑到**其它啥**与 M1、M2 等或有差别，直接照搬未必见效。同时，**更多……**

其四、用 W5 来化解 M3，或过于理想化。且不说 W5 未必能真正解决好 M3，作者还忽略了 W5 若用之不当，也可能会起**反作用**，甚至于得不偿失。再则，**更多……**

通过以上分析，用作者这些措施很难就能解决好这些问题，仍需作者更充分地论证。

**五、七种分析段简洁表述（假定以 E 为论据，P 为结论）**

1、前提推结果：首先，由 E 不必然推出 P，作者或忽视了 XYZ 也可能会导致该结果。并且…，另外…

2、结果推前提：首先，即使发生 P，也很难说是 E 唯一造成，或许 P 的发生也与 XYZ 等因素有关。再则…同时…

3、有关系：首先，就算 E 会导致 P，也很难说 E 和 P 就是正相关，甚至是造成该结果的唯一因素；作者或忽视了 XYZ 也可能会影响或产生 P。并且…，另外…

4、无关系：首先，作者认为由 E 导致 P，作者仅有定性的描述缺乏定量的数据作深入对比分析，很难说两者有本质关联。难免有些主观臆断，甚至想当然。更何况，XYZ 也可能产生 P。EP 或仅是同一时期偶然同步存在而已，并不能说明两者就是因果关系。再说…

5、有数据：首先，仅从 E 就推出 P，E 本身或仅是特例，样本不够全面，难免以偏概全或者一概而论。其它非 E 的情况是否如同 E 一样呢。何况，XYZ 也可能会导致该结果。另外…

6、无数据：参考无关系。

7、用措施：首先，作者想用 E 来解决 P，且不说 P 本身或许并不发生，有了 E 也不见得可行，作者或忽略了实施 E 无论代价技术人才或很难具备，就算勉强能付诸实施，其效果也很可能收效甚微。关键是，如若盲目用 E、过度依赖 E，用之不当，不定还能带来反作用。

## 六、高分理由四大来源（现场笔记）

1、变化：

2、时间：

3、空间：

4、正反：

## 七、高手过招，见招拆招口决

当作者说我们都一样，我们说我们或许不一样，不能混为一谈；

当作者说我们不一样，我们说也许其实也一样，作者忽视了除了差异也难免有共性；

当作者没有前提只给结论，我们说作者很可能想当然，主观臆断；

当作者给了点理由，没有数据，我们说作者至少缺少定量数据作深入对比分析；

当作者给了数据，只要不是穷举（完全归纳），我们说作者也许样本不足，以偏概全；

当作者给一个人、几个人，几个单位、行业、国家，统统说仅是个例，特例，很难具有普遍性。作者很可能以偏概全；

当作者给了百分之百的数据（完全归纳），我们说还可能另有它因，作者夸大其词。

另：时间动态变化；生搬硬套；不同人不同时间不同地点吼吼不同。

## 八、历年真题 8 分钟速写训练（现场抽讲）

| 时 间 | 论题或文章主线 | 难易程度和类型 |
| --- | --- | --- |
| 2019 | 选择越多越痛苦 | 中偏难；求证型 |
| 2018 | 物质欲望不会带来空虚 | 难题；求证型 |
| 2017 | 利用赏罚治理臣民 | 难题；偏求解 |
| 2016 | 大学生就业并不难 | 中偏易；求证求解混合型 |
| 2015 | 生产过剩政府不必管 | 中难；求证型 |
| 2014 | 用好制衡和监督必定成功 | 中偏难；求解型 |
| 2013 | 搞好文化增强软实力 | 中难；求解求证混合型 |
| 2012 | 用相对论解决自然问题就是不解决 | 超难；求证型 |
| 2011 | 如何判断股价高低并从股市赚钱 | 中难；求解求证混合型 |
| 2010 | 信息技术缩小世界差距 | 中难；求证求解混合型 |
| 2009 | "知识主是力量"已成为空洞 | 难题；求证型 |
| 2008 | 中医是科学还是伪科学之辩 | 中难；求证型 |
| 2007 | 我国经济学很落后，经济家很少 | 中难；求证型 |
| 2006 | 参与国际合作带来双赢 | 中偏易；求证型 |
| 2005 | 读 MBA 是种浪费 | 难题；求证型 |
| 2004 | 本土公关公司有优势，将成为世界级 | 容易；求证型 |
| 2003 | 混乱的行动比有序的衰亡好得多 | 容易；求证型 |

| 2002 | 达达运动鞋与运动 | 容易；求证型 |

## 九、强化阶段讲义梳理（重要例题串讲）

## 十、预测系列习题

为确保训练的充分性，防止向外泄露。试题由机构每周单独分发，汇总讲评。

## 十一、秘押模考题讲评

同上，请参加机构模考。

另外：重要题、方向题不一定全在秘押题中。考前一周老师会告诉预测+秘押中其中哪些是重点。考生只需要把每套题写好。

## 十二、预测及模考题老师参考范文

为防泄露，考前两周汇总以电子图片形式发送。

# 第二部分：论说文

## 一、论说文冲刺任务

|  | 五类文（10分以下） | 四类文（11-16） | 三类文（17-22） | 二类文（23-28） | 一类文（29-35） |
|---|---|---|---|---|---|
| **扣分依据** | 或者严重跑题，严重偏题；或者字数严重不及半数；或者思路混乱；或者词不达意；或者语句不通；或者素材不当；或者胡凑。 | 或者稍偏题；或者空洞；或者思路不清，论证含混，即无理或无据；或者素材引用不当或者描述不当；或者语句一般；或者主线不明；或者字数稍不足。 | 多数输在结构和论证上。或者结构不强，或者论证不力，或者少论据或者少分析；或者语句还有不通；或者一不够一致；或者强调不够；或者首尾平淡；或者过于哆嗦。一句话总结，三类文给人的感觉是像那么回事了，但就是应该作文而已，没太大吸引力。 | 主要输在论证上，个别案例使用不当，或者描述不当，或者分析欠缺，或者力度不够；或者语言还不够精练，考究。一句话概括，二类文能给阅卷者耳目一新，有一定吸引力和说服力，但没到拍手称绝的程度。 | 观点明确，结构清晰，逻辑连贯，衔接自然，论证充实，语言流畅，有思想，有深意，有魅力，接地气。读完让人佩服的程度决定分数。 |
| **写作畏惧者**(考作文是此生最不愿直面的宿命。思路混乱，语句不通。缺少章法，缺乏自信) | 一般只要上完第一次课，懂得省题。不跑题，思路对，字数够，就可跨越此坑。 | 这类考生首先解决三个基本问题：1、扣题；2、套用必要靠谱结构；3、把字数想办法凑够。写上2-3篇达到此类文。 | 在四类文基础之上，加强结构训练，即写作思路上有高度，有深度。开头结尾不再俗套。写上5-8篇达到此类文。 | 三类文基础上，增加点论据。把句子写流畅，开头结尾精炼。分论点精辟有力。能应对各种题，稳定在此类即是最好追求。最好精写15篇以上 | 一类文就交给运气吧。如果想要还得补上字、词、句。要解决的东西太多，太多。 |
| **写作被动者**（不反感，不主动。喜欢套用模板，喜欢走捷径） | 被动者不是一点不会，是不愿写，依赖症，还不懂得应试要求。一般学习一遍提笔理应跨过此坑。 | 先解决学习态度，由被动转为主动。同上一类考生一样先扣题，有靠谱的结构，字数足够。写上 | 在四类文或者上灰就进入三类文，需要在练习中找到自信，在精写中养成习惯。加强结构训练，稳定三类文 | 三类文之上，应加强点文笔训练，应写点走心作品，写点有深度，有厚度，有独到见解，个性化的文章。任何难题都可稳定在此。或需要10 | 二类文之上，就剩才气和运气了。在文章结构和思路高大上以外，可以追求文字的精美，灵动，灵性。可以诗意地表达。这没有数量限制，有题感就有可能。 |

| | | 2-3 篇达到此类文。 | 以上。写上 4-6 篇达到此类文。 | 篇以上。 | |
|---|---|---|---|---|---|
| **写作达人**（爱写，能写。出色的文艺青年，出众的意见领袖） | 写作达人只要听一遍课就不会掉入此坑。但追求标新立异反而容易跑题从而掉进绝不属于你们的低分坑。 | 先回归写作状态就行。提笔那怕先写 1 篇。 | 三类文是你们的底线，只要按应试规则去写。不骄傲，写上 3-5 篇达到此类文。但必须超越这一层次。 | 你们要稳定在二类文上,就必然把每个细节做透。即标题、开头、本论、结尾都要有新意，有所不同。尤其是结构,当然得高大上。绝不能俗。需要写上 6-8 篇以上或能稳定。 | 按道理,你们应追求一类文,并且稳定在一类文。但能不能确保你能去尽可能追求完美,最终能否完美有运气的成分。如若不做,几无可能。还是要重细节，再精写，少说 10 篇。 |

## 二、老师写作思维导图之论说文
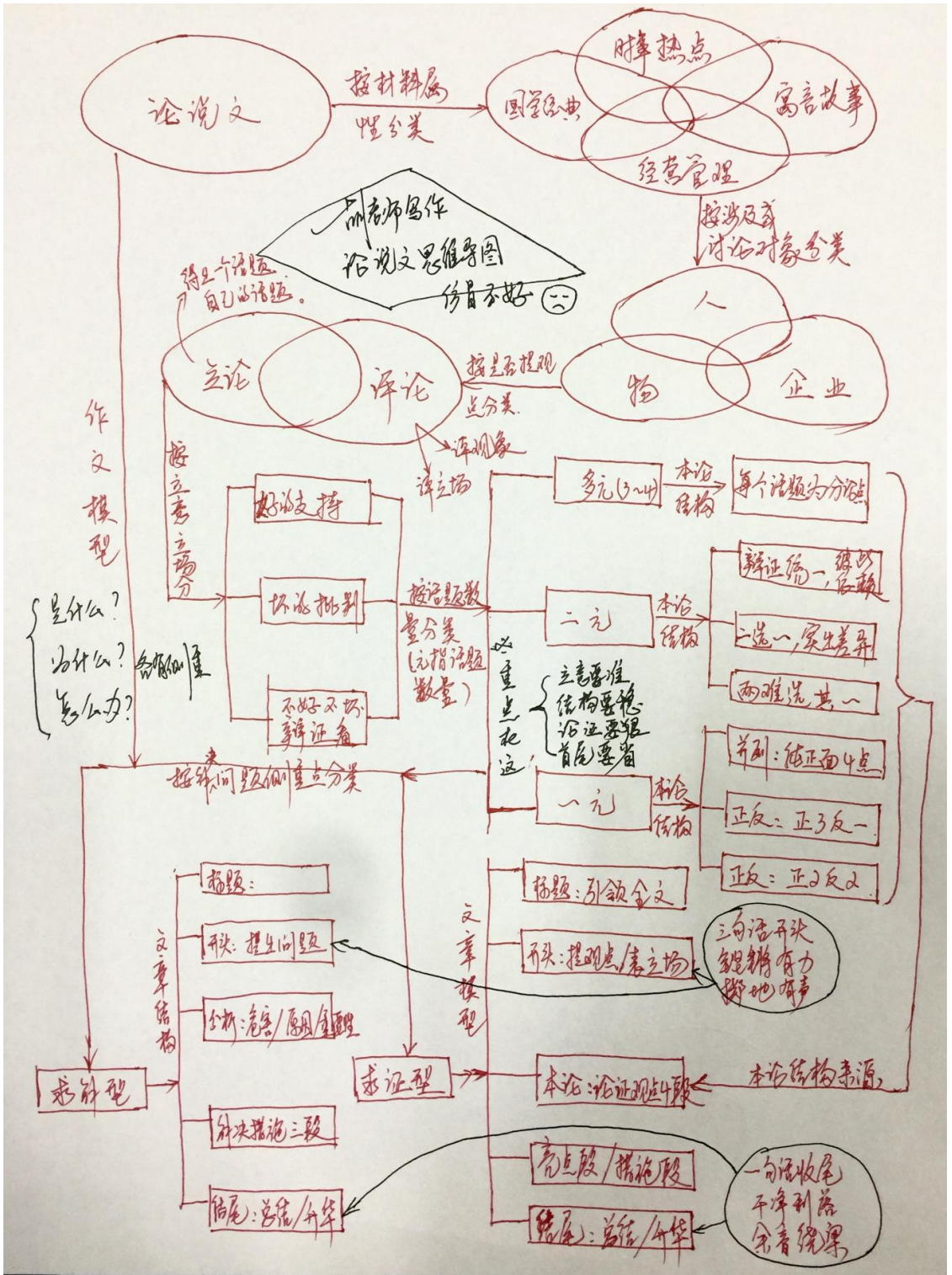
## 三、论说文的核心价值（包括但不限于以下 5 性）

**论说文的根本价值：**

1、论证性——

2、普世性——

3、理论性——

4、逻辑性——

5、辩证性——

## 四、论说文化繁为简 8 条对策（课堂笔记）：

1、

2、

3、

4、

5、

6、

7、

8、

## 五、论说文作文模型升级版（现场笔记）

## 六、十大应试锦囊

1、 选原则：审题准；结构稳；论证狠；头尾省

2、 审题准：读材料；找话题；定立场；作验证

3、 找话题：找题眼；看角色；看强调；看引申

4、 定立场：写立论；写评论；写褒贬；写辩证

5、 结构稳：一元型；二元论；综合写；广透深

6、 论证狠：有主题；讲道理；摆事实；发深省

7、 讲道理：找联系；作解释；看实质；谈利弊

8、 摆事实：引案例；素材准；不超三；有详省

9、 头尾省：三句话；理说清；扣题意；作引申

10、卷面整：字工整；卷面清；话好听；得高分

## 七、论说文高分结构

### （一）二元对立型

**1、辩证统一型（A，B）　附其它课堂笔记综合型**

A 的优势与不足

B 的优势与不足

A 和 B 结合的互补

亮点段

如 2016 扩大生产还是追加研发，2015 仁与富。

## 2、取其一型（A，B）以 A 为例

B 相对于 A 的欠缺一二

A 相对于 B 的优势一二

所以，应提倡或使用 A

亮点段

如：2011 年　要"拔尖"，更要"冒尖"

## 3、两难选择型（A，B）以选 A 为例

B 相对于 A 的好，但不足

A 相对于 B 的不足，但好

与其 B，莫如 A。（加强 A，兼顾 B）

亮点段

如：2001 年相马与赛马

## （二）批判型

1、问题产生原因 abc

2、现象直接危害 efg

3、解决措施 xyz

## （三）加强型

1、积极意义 abc

2、反面对照 efg

3、如何推广 xyz

## （四）措施型

1、问题产生原因 abc

2、现象直接危害 efg

3、解决措施 xyz

备注：要么讲危害，要么析原因。重点在于措施上。

## （五）其它类型

## 1、解决问题综合分析型

是什么（类，现象），

为什么（因，本质），

怎么办（法，途径）

积极意义（果，价值）

亮点段

如： 1997，1998，2009 三鹿奶粉

## 2、解决问题综合措施型

加强自身（观念，能力，行动，要求等）

营造环境（文化，道德，认识，普遍等）

完善制度（规则，原则，制度，法制等）

搞好监督（自身，对方，人民，政府等）

奖惩并举（赏罚分明）

亮点段

如：2010 学者功利化；2012 学人跟风。

## 3、解决问题单项措施型（以 C 为例）重要性必要性

正面说一二（有 C 能怎样）

反面说一二（缺 C 会怎样）

如何做

亮点段

如：2009 三鹿奶粉  质量是企业的生命线

## 八、论说文段落构建

**主题句+讲道理+摆事实+作分析（作总结）**

*摆事实：* 引例；类比；对比；排比；并列；因果

*讲道理：* 假设；解释；归纳；演绎；选择；条件

*选句式：* 递进；顶真；对偶；倒装；化用；强调

*定语气：* 陈述；祈使；肯定；否定；设问；反问

## 九、段落范本参考

　　且定这就是一场有策划的炒作，但也算炒得精彩、炒得高雅、炒得有意义（主题/排比/肯定）。年轻女子想博名利，这是人之常情，不能用圣人标准苛求凡人。但她并没有选择语不惊人死不休、宽衣解带博眼球这些"邪路"捷径，而是用助人为乐这样的行动，宣讲了年轻一代应该珍视的正确价值观（引例/解释/对比/对偶/肯定）。即便老汉也是演员，至少他们演活了一个道理：帮助弱势群体是年轻人应尽之责（假设/祈使/归纳）。

　　最后，为仁的结果未必就是不富（主题/双重否定/假设）。企业和企业家热心公益、热衷慈善，不仅能赢得顾客好感、吸引更多顾客，还能打响企业品牌，提升品牌形象，最终

实现名利双收（解释/引例/递进/强调）。由此看来，为仁可以为企业带来珍贵的无形资产，这些无形资产也是企业重要的核心价值（归纳/递进/肯定）。

"教"须授之以"理"。"理"涵盖"道理"、"法理"、"哲理"这三过程。首先，授之以"为人"之道理，让我们成为一个区别于仅有自然属性的动物的社会公民；接着，再授之以"处事"之法理，让我们成为一个"知法守法"的文明公民；最后，辅之以"辩证唯物"之哲理，让我们成为一个有"独立思维、判断与价值取向"的自由公民。春秋战国之百家争鸣、古罗马帝国之民主政治、巴黎公社运动等历史事件的发生，尽管有其时代局限性，但是我们不能矢口否认其在很大程度上证明"和谐城邦须授之以'理'，其'一致性'一面方能尽显完美"。

论辩之于真理，就是明辨是非，兼听则明。智者千虑，必有一失。愚者千虑，必有一得。所谓当局者迷，旁观者清。换个角度来看问题，换个方向看自己。我们更能看清自己，更能认清形式。从而明辨是非，明察秋毫。从而避免了主观主义，教条主义。避免了独断专横，也减少些固执己见。当然，读万卷书，行万里路。我们需要实践来验证其真理，当然不能凡事都付诸于实践。有些假说未加论证就草率实验，或难承受其代价之重。所以，论辩之于真理可以减少不必要的实践，让我们少走弯路。

论辩之于真理，就是百家争鸣，百花争艳。我们在与对手的切磋中增长见识，我们与对方的探讨走向了客观。这是种全方位的成长，我们知己知彼，扬长避短，优势互补。我们在争论中博览百家，博取众长。我们在辩论中丰富了经验，提升了实力。不是说嘛，三个臭皮匠顶一个诸葛亮。他山之石，可以攻玉。论辩无疑是有益的借鉴。

闭关锁国，带来的未必是独立自强。一定程度是作起了自闭的茧，垒起了僵化的墙。看不见外面的阳光，隔阻了先进的思想。自高自大，自以为是，盲目自恋，还孤芳自赏。这个世界不全是自己的意志，也不是一花独放。你放慢脚步，别人摩拳擦掌。世上的国度从来就是越强越努力，越努力越强。强者逻辑，总有人觊觎你的暗香，总有人妒忌你的私藏。结果，大清帝国倒于保守，德川慕府毁于自恋。一曲挽歌，几多悲怆。

开门迎客，迎来的是雨露阳光，带来的是先进思想。他山之石，为我所用。补己之短，用其所长。师以技长以制夷，风物长宜放眼量。打开国门，用先进科技、充足的资金，专业的人才武装。让优质的产品流入厅堂，让先进文化精彩绽放。如，明治维新打开国门，生机释放。如大韩民国照搬欧美，成为亚洲"四小龙"。

对外开放，既能互利共赢，互通有无。关键还在于互学互鉴，互商互帮。尺有所短，寸有所长。开放交流，就是照镜子，知其短，知其长。照照镜子，量量长短，避己所短，用己所长。一个犹太人说得说："再富有的人总有买不起的宝石"。站在全球化的今天，搞民族主义，专横主义，自私主义倒行逆施，注定前途迷茫。面对新时代，"一带一路"，构建人类命运共同体，自然前途无量。"共商，共建，共享"无疑是大国智慧，时代担当。

自力更生不能丢。从外部来说，技不如人，受制于人，难免被穿小鞋，受点小气。一度战战兢兢的中兴正是在核心技术上受制于人。反观华为，早做准备，自力更生，研发芯片。不丹与尼泊尔长期依赖于印度，也不得不听命于印度。所谓求人不如求自己，拿人手短。天下没有免费的午餐。切勿养成过度依赖的坏毛病。依赖会带来四害。其一，凡事购买，代价高昂。其二，啥都外求，啥都不精。其三，一步落后步步落后，难免处处受制于

人，处处看人脸色。其四，捡人剩饭，味同嚼蜡。想想，先进的东西怎么可能优先给你？所以，自力更生丢不起。

最后，输了一小步，兢兢业业赢全部。输赢本就是人生的常态。漫漫人生路，怎不错几步。我们一方面要避免一步落后处处落后，另一方面是要找准原因，寻求突破，重整旗鼓，反败为胜。其实，人生如棋，但赢不是全部人生。有时，不防洒脱一点，平常心看待成败。如苏轼般："胜固欣然，败亦可喜。"自然，我们并未找借口，主动服输。而是说要认清生活的本来面目，找出差距，重振雄风，再次出发。而不是一蹶不振，消极对待。所谓"宝剑锋出磨砺出，梅花香自苦寒来"，历经了风雨，方能见彩虹。

**十、亮点词；亮点句；亮点段（现场笔记）**

**十一、如何确定自己的文章不跑题（现场笔记）**

**十二、2020 命题方向及结构 10 类**
**（一）涉及对象：（现场笔记为主）**

**（二）写作重点：（现场笔记为主）**

**（三）涉及话题个数：（现场笔记为主）**

**（四）涉及话题类型及应对之道（现场笔记为主）**
治国理政：
个人素养（素质修养）：
社会现实：
社科人文：
企业经管：

**（五）2020 话题预测（现场笔记为主）**
1、愿景与使命类：
　　标题：
　　结构：

2、责任与担当类
　　标题：
　　结构：

3、发展与进取类（创新与开拓；根基与前提）
    标题：
    结构：

4、素质与修养类
    标题：
    结构：

5、哲理与虚拟类（抽象概念/管理之道/驭人之术）
    标题：
    结构：

6、格局与利弊类
    标题：
    结构：

7、辩证看（现象，事物）
    标题：
    结构：

8、人物与现象类
    标题：
    结构：

9、措施与方法类
    标题：
    结构：

10、二元对立类
    标题：
    结构：

## 十二、论说文话题专集
### 1、中国梦与人民梦（凝聚力量，实现中国梦）

中国梦——伟大复兴——两个一百年
实现中国梦，就是实现中华民族的伟大复兴，实现伟大复兴就是实现两个一百年。

两个一百年：建党一百年国民经济更加发展，各项制度更加完善；建国一百年基本实现现代化，建成富强、民主、文明的社会主义国家。

实现中华民族伟大复兴历史上三次里程碑：建党、建国、改革开放。

中国梦与个人梦的关系：

## 2、新时代我国的主要矛盾

人民日益增长的对美好生活需要同不平衡不充分的发展之间的矛盾。

## 3、最美奋斗者

新中国"最美奋斗者"是新中国成立 70 周年之际，在"我和我的祖国"群众性主题教育活动中提出并表彰的一批（共计 278 名个人，22 个集体）为执行党的基本理论、基本路线、基本方略、信念坚定、为民服务、勤政务实、敢于担当、清正廉洁的优秀基层党员干部；为国家富强、民族振兴、人民幸福作出重要贡献的各行各业代表人士；长期奋战在基层一线、在平凡的岗位上做出不平凡业绩的工人、农民、知识分子以及人民解放军指战员、武警部队官兵、公安干警、消防救援队伍指战员等。

## 4、女排精神

女排精神是中国女子排球队顽强战斗、勇敢拼搏精神的总概括。其具体表现为：扎扎实实，勤学苦练，无所畏惧，顽强拼搏，同甘共苦，团结战斗，刻苦钻研，勇攀高峰。她们在世界排球赛中，凭着顽强战斗、勇敢拼搏的精神，五次蝉联世界冠军，为国争光，为人民建功。她们的这种精神，给予全国人民巨大的鼓舞。国务院以及国家体委、共青团中央、全国青联、全国学联和全国妇联号召全国人民向女排学习。从此，女排精神广为传颂，家喻户晓，各行各业的人们在女排精神的激励下，为中华民族腾飞顽强拼搏。

值得一提的是：中国女排五连冠群众获得"最美奋斗者"荣誉称号。

## 5、青年与国（强国有我；爱国爱岗；爱国爱党爱岗爱己的深层关系）

黄文秀，北师大法学硕士毕业后，放弃城市工作，回到家乡担任驻村第一书记。通过她言传身教，以身作责，一心为民的工作作风，倾力扶贫，终让全村 103 户贫困户大部分已脱贫。然而，在 2019 年 6 月 16 日晚，黄文秀从百色返回乐业途中遭遇山洪因公殉职，年仅 30 岁。

## 6、手机依赖症（低头簇）

低头族，是指如今无论何时何地都作"低头看屏幕"状，想通过盯住屏幕的方式，把零碎的时间填满的人。低头族有的看手机，有的掏出平板电脑或笔记本电脑上网、玩游戏、看视频，他们低着头是一种共同的特征，他们的视线和智能手机，相互交感直至难分难解。

低头族英文单词 Phubbing 由澳大利亚麦肯和 Macquarie 大辞典联手精心杜撰而来,形容那些只顾低头看手机而冷落面前的亲友的"低头族"。

## 十三、历年真题 5 分钟速写训练（现场抽讲）

| 时　间 | 材料，内容 | 立场及最佳立意 |
|---|---|---|
| 2019 | 真理与论辩 | 支持：论辩出真知 |
| 2018 | 人工智能的两种观点 | 辩证看；拥抱 AI，平衡发展 |
| 2017 | 扩大生产还是研发新品 | 综合立意或二选一 |
| 2016 | 城邦的一致性与多样性 | 支持：教育协同，和而不同 |
| 2015 | 古代：为富不仁，为仁不富 | 现代：既要为富，也要为仁 |
| 2014 | 孔雀的尾巴大些还是小些好 | 辩证看：扬长避短，用活优势 |
| 2013 | 空客与新波音的诞生背景 | 支持：合作破解竞争 |
| 2012 | 熊十力谈中国学人跟风突出 | 批判：学人跟风须谨慎 |
| 2011 | 人才的出现有拔尖与冒尖 | 支持：要拔尖，更要冒尖 |
| 2010 | 当前学者功利化现象突出 | 批判：淡泊名利，追求真理 |
| 2009 | 由"三鹿奶粉"所想到的 | 批判：向说"三鹿现象"NO |
| 2008 | "原则"与"原则上" | 支持：坚持原则，与时俱进 |
| 2007 | 司各脱第一个到达南极 | 支持：敢为天下先/抢占先机 |
| 2006 | 挖井还是挑水 | 综合："挑水"不如"挖井" |
| 2005 | 丘吉尔放弃考文垂 | 支持：从全局出发 |
| 2004 | 三个建筑工人的工作观 | 综合：心态决定命运 |
| 2003 | 读经不如读史 | 综合：读经与读史 |
| 2002 | 关于压力的不同看法 | 支持：压力，也是动力 |
| 2001 | 元素钒的发现 | 支持：心若恒，事必成 |
| 2000 | 成功也是失败之母 | 支持：成功与失败/居安思危 |
| 1999 | 一天与一年，青年画家的苦恼 | 支持：厚积薄发/付出与回报 |
| 1998 | 当下儿童高消费现象突出 | 批判：警惕，儿童高消费 |
| 1997 | 取洋名成为时尚 | 综合：洋名热的冷思考 |

## 十四、强化阶段讲义梳理（重要例题串讲）
　　如何改优示范（范文欣赏）

## 十五、预测系列习题
　　为确保训练的充分性，防止向外泄露。试题由机构分发，汇总讲评。

## 十六、秘押模考题讲评

同上，请参加机构模考。

另外：重要题、方向题不一定全在秘押题中。考前一周老师会告诉预测+秘押中其中哪些是重点。考生只需要把每套题写好。

## 十七、预测及模考题老师参考范文

为防泄露，考前两周汇总以电子图片形式发送。

# 2020 年管理类联考英语（二）串讲讲义

## I Use of English
1 做题步骤
2 做题策略
3 真题实践

### 2011 年真题

The Internet affords anonymity to its users, a blessing to privacy and freedom of speech. But that very anonymity is also behind the explosion of cyber-crime that has___1___across the Web.

Can privacy be preserved___2___ bringing safety and security to a world that seems increasingly___3___?

Last month, Howard Schmidt, the nation's cyber-czar, offered the federal government a___4___ to make the Web a safer place--a "voluntary trusted identity" system that would be the high-tech ___5___ of a physical key, a fingerprint and a photo ID card, all rolled___6___one. The system might use a smart identity card, or a digital credential___7___to a specific computer, and would authenticate users at a range of online services.

The idea is to___8___a federation of private online identity systems. Users could___9___which system to join, and only registered users whose identities have been authenticated could navigate those systems. The approach contrasts with one that would require an Internet driver's license ___10___by the government.

Google and Microsoft are among companies that already have these "single sign-on" systems that make it possible for users to ___11___ just once but use many different services.

___12___, the approach would create a "walled garden" in cyberspace, with safe "neighborhoods" and bright "streetlights" to establish a sense of a ___13___ community.

Mr. Schmidt described it as a "voluntary ecosystem" in which "individuals and organizations can complete online transactions with___14___,trusting the identities of each other and the identities of the infrastructure ___15___which the transaction runs."

Still, the administration's plan has___16___ privacy rights activists. Some applaud the approach; others are concerned. It seems clear that such a scheme is an initiative push toward what would___17___be a compulsory Internet "driver's license" mentality.

The plan has also been greeted with ___18___by some computer security experts, who worry that the "voluntary ecosystem" envisioned by Mr. Schmidt would still leave much of the Internet ___19___. They argue that all Internet users should be___20___to register and identify themselves, in the same way that drivers must be licensed to drive on public roads.

1.　　A. swept　　　　　B. skipped　　　　C. walked　　　　D. ridden

2.　　A. for　　　　　　B. within　　　　　C. while　　　　　D. though

3.　　A. careless　　　　B. lawless　　　　C. pointless　　　　D. helpless

4.　　A. reason　　　　　B. reminder　　　　C. compromise　　　D. proposal

5.　　A. information　　　B. interference　　C. entertainment　　D. equivalent

6.　　A.by　　　　　　　B. into　　　　　　C. from　　　　　　D. over

7.　　A. linked　　　　　B. directed　　　　C. chained　　　　　D. compared

8.　　A. dismiss　　　　　B. discover　　　　C. create　　　　　D. improve

9.　　A. recall　　　　　B. suggest　　　　　C. select　　　　　D. realize

10.　A. released　　　　B. issued　　　　　C. distributed　　　D. delivered

11.　A. carry on　　　　B. linger on　　　　C. set in　　　　　D.log in

12.　A. In vain　　　　　B. In effect　　　　C. In return　　　　D. In contrast

13.　A. trusted　　　　　B. modernized　　　C. thriving　　　　D. competing

14.　A. caution　　　　　B. delight　　　　　C. confidence　　　D. patience

15.　A. on　　　　　　　B. after　　　　　　C. beyond　　　　　D. across

16.　A. divided　　　　　B. disappointed　　C. protected　　　　D. united

17.　A. frequently　　　B. incidentally　　　C. occasionally　　　D. eventually

18.　A. skepticism　　　B. relevance　　　　C. indifference　　　D. enthusiasm

19.　A. manageable　　　B. defendable　　　C. vulnerable　　　D. invisible

20.　A. invited　　　　　B. appointed　　　　C. allowed　　　　　D. forced

## 2012 年真题

Millions of Americans and foreigners see G.I. Joe as a mindless war toy, the symbol of American military adventurism, but that's not how it used to be. To the men and women who __1__ in World War II and the people they liberated the G.I. was the __2__ man grown into hero, the poor farm kid torn away from his home, the guy who __3__ all the burdens of battle, who slept in cold foxholes, who went without the __4__ of food and shelter, who stuck it out and drove back the Nazi reign of murder. This was not a volunteer soldier, not someone well paid, __5__ an average guy, up __6__ the best trained, best equipped, fiercest, most brutal enemies seen in centuries.

His name is not much. G.I. is just a military abbreviation __7__ Government Issue, and it was on all of the articles__8__ to soldiers. And Joe? A common name for a guy who never __9__ it to the top. Joe Blow, Joe Magrac…a working class name. The United States has __10__ had a president or vice-president or secretary of state Joe.

G.I. Joe had a __11__ career fighting German, Japanese, and Korean troops. He appears as a character, or a __12__ of American personalities, in the 1945 movie The Story of G.I. Joe,

based on the last days of war correspondent Ernie Pyle. Some of the soldiers Pyle ___13___ portrayed themselves in the film. Pyle was famous for covering the ___14___ side of the war, writing about the dirt-snow-and-mud soldiers, not how many miles were 15 or what towns were captured or liberated.

His reports ___16___ the "Willie" cartoons of famed Stars and Stripes artist Bill Maulden. Both men ___17___ the dirt and exhaustion of war, the ___18___ of civilization that the soldiers shared with each other and the civilians: coffee, tobacco, whiskey, shelter, sleep. ___19___ Egypt, France, and a dozen more countries, G.I. Joe was any American soldier, ___20___ the most important person in their lives.

1．[A] performed    [B] served    [C] rebelled    [D] betrayed
2．[A] actual    [B] common    [C] special    [D] normal
3．[A] bore    [B] eased    [C] removed    [D] loaded
4．[A] necessities    [B] facilities    [C] commodities    [D] properties
5．[A] and    [B] nor    [C] but    [D] hence
6．[A] for    [B] into    [C] from    [D] against
7．[A] meaning    [B] implying    [C] symbolizing    [D] claiming
8．[A] handed out    [B] turn over    [C] brought back    [D] passed down
9．[A] pushed    [B] got    [C] made    [D] managed
10．[A] ever    [B] never    [C] either    [D] neither
11．[A] disguised    [B] disturbed    [C] disputed    [D] distinguished
12．[A] company    [B] collection    [C] community    [D] colony
13．[A] employed    [B] appointed    [C] interviewed    [D] questioned
14．[A] ethical    [B] military    [C] political    [D] human
15．[A] ruined    [B] commuted    [C] patrolled    [D] gained
16．[A] paralleled    [B] counteracted    [C] duplicated    [D] contradicted
17．[A] neglected    [B] avoided    [C] emphasized    [D] admired
18．[A] stages    [B] illusions    [C] fragments    [D] advances
19．[A] With    [B] To    [C] Among    [D] Beyond
20．[A] on the contrary    [B] by this means    [C] from the outset    [D] at that point

## 2013 年真题

Given the advantages of electronic money, you might think that we would move quickly to the cashless society in which all payments are made electronically. ___1___, a true cashless society is probably not around the corner. Indeed, predictions have been ___2___ for two decades but have not yet come to fruition. For example, Business Week predicted in 1975 that electronic means of

payment would soon "revolutionize the very __3__ of money itself," only to __4__ itself several years later. Why has the movement to a cashless society been so__5__ in coming?

Although electronic means of payment may be more efficient than a payments system based on paper, several factors work __6__ the disappearance of the paper system. First, it is very __7__ to set up the computer, card reader, and telecommunications networks necessary to make electronic money the__8__ form of payment. Second, paper checks have the advantage that they __9__ receipts, something that many consumers are unwilling to __10__. Third, the use of paper checks gives consumers several days of "float" -- it takes several days __11__ a check is cashed and funds are __12__ from the issuer's account, which means that the writer of the check can earn interest on the funds in the meantime. __13__ electronic payments are immediate; they eliminate the float for the consumer.

Fourth, electronic means of payment may __14__ security and privacy concerns. We often hear media reports that an unauthorized hacker has been able to access a computer database and to alter information __15__ there. The fact that this is not an__16__ occurrence means that dishonest persons might be able to access bank accounts in electronic payments systems and __17__ from someone else's accounts. The __18__ of this type of fraud is no easy task, and a new field of computer science is developing to __19__ security issues. A further concern is that the use of electronic means of payment leaves an electronic __20__ that contains a large amount of personal data. There are concerns that government, employers, and marketers might be able to access these data, thereby violating our privacy.

1.  [A] However      [B] Moreover      [C] Therefore      [D] Otherwise
2.  [A] off          [B] back          [C] over           [D] around
3.  [A] power        [B] concept       [C] history        [D] role
4.  [A] reward       [B] resist        [C] resume         [D] reverse
5.  [A] silent       [B] sudden        [C] slow           [D] steady
6.  [A] for          [B] against       [C] with           [D] on
7.  [A] imaginative  [B] expensive     [C] sensitive      [D] productive
8.  [A] similar      [B] original      [C] temporary      [D] dominant
9.  [A] collect      [B] provide       [C] copy           [D] print
10. [A] give up      [B] take over     [C] bring back     [D] pass down
11. [A] before       [B] after         [C] since          [D] when
12. [A] kept         [B] borrowed      [C] released       [D] withdrawn
13. [A] Unless       [B] Until         [C] Because        [D] Though
14. [A] hide         [B] express       [C] raise          [D] ease
15. [A] analyzed     [B] shared        [C] stored         [D] displayed
16. [A] unsafe       [B] unnatural     [C] unclear        [D] uncommon
17. [A] steal        [B] choose        [C] benefit        [D] return

18. [A] consideration　　[B] prevention　　[C] manipulation　[D] justification

19. [A] cope with　　　　[B] fight against　　[C] adapt to　　　[D] call for

20. [A] chunk　　　　　　[B] chip　　　　　　[C] path　　　　　[D] trail

## 2014 年真题

　　Thinner isn't always better. A number of studies have __1__ that normal-weight people are in fact at higher risk of some diseases, compared to those who are overweight. And there are health conditions for which being overweight is actually __2__. For example, heavier women are less likely to develop calcium deficiency than thin women. __3__, among the elderly, being somewhat overweight is often an __4__ of good health.

　　Of even greater __5__ is the fact that obesity turns out to be very difficult to define. It is often defined __6__ body mass index, or BMI. BMI __7__ body mass divided by the square of height. An adult with a BMI of 18 to 25 is often considered to be moral weight. Between 25 and 30 is overweight. And over 30 is considered obese. Obesity, __8__, can be divided into moderately obese, severely obese, and very severely obese. While such numerical standards seem __9__, they are not. Obesity is probably less a matter of weight than body fat. Some people with a high BMI are in fact extremely fit, __10__ others with a low BMI may be in poor __11__. For example, many collegiate and professional football players __12__ as obese, though their percentage body fat is low. Conversely, someone with a small frame may have high body fat but a __13__ BMI. Today we have a(n) __14__ to label obesity as a disgrace. The overweight are sometimes __15__ in the media with their faces covered. Stereotypes __16__ with obesity include laziness, lack of will power, and lower prospects for success. Teachers, employers, and health professionals have been shown to harbor biases against the obese. __17__ very young children tend to look down on the overweight, and teasing about body build has long been a problem in schools.

　　Negative attitudes towards obesity, __18__ in health concerns, have stimulated a number of anti-obesity __19__. My own hospital system has banned sugary drinks from its facilities. Many employers have instituted weight loss and fitness initiatives. Michelle Obama has launched a high-visibility campaign __20__ children obesity, even claiming that it represents our greatest national security threat.

1．[A] concluded　　　[B] ensured　　　[C] doubted　　　[D] denied

2．[A] dangerous　　　[B] protective　　[C] sufficient　　[D] troublesome

3．[A] Instead　　　　[B] However　　　[C] Likewise　　　[D] Therefore

4．[A] objective　　　[B] indicator　　[C] origin　　　　[D] example

5．[A] impact　　　　[B] relevance　　[C] assistance　　[D] concern

6．[A] in favor of　　[B] in case of　　[C] in terms of　　[D] in respect of

7．[A] equals　　[B] determines　　[C] measures　　[D] modifies

8．[A] in turn　　[B] in contrast　　[C] in essence　　[D] in part

9．[A] complicated　　[B] conservative　　[C] variable　　[D] straightforward

10．[A] so　　[B] unless　　[C] since　　[D] while

11．[A] shape　　[B] spirit　　[C] balance　　[D] taste

12．[A] start　　[B] qualify　　[C] stay　　[D] retire

13．[A] strange　　[B] constant　　[C] normal　　[D] changeable

14．[A] option　　[B] tendency　　[C] opportunity　　[D] reason

15．[A] employed　　[B] pictured　　[C] imitated　　[D] monitored

16．[A] compared　　[B] combined　　[C] settled　　[D] associated

17．[A] Yet　　[B] Still　　[C] Even　　[D] Only

18．[A] despised　　[B] ignored　　[C] corrected　　[D] grounded

19．[A] discussions　　[B] businesses　　[C] policies　　[D] studies

20．[A] against　　[B] for　　[C] without　　[D] with


## 2015 年真题

In our contemporary culture, the prospect of communicating with – or even looking at – a stranger is virtually unbearable. Everyone around us seems to agree by the way they cling to their phones, even without a ___1___ on a subway.

It's a sad reality – our desire to avoid interacting with other human beings – because there's ___2___ to be gained from talking to the stranger standing by you. But you wouldn't know it, ___3___ into your phone. This universal protection sends the ___4___ ："Please don't approach me."

What is it that makes us feel we need to hide ___5___ our screens?

One answer is fear, according to Jon Wortmann, an executive mental coach.We fear rejection, or that our innocent social advances will be ___6___ as "weird". We fear we'll be ___7___. We fear we'll be disruptive.

Strangers are inherently ___8___ to us, so we are more likely to feel ___9___ when communicating with them compared with our friends and acquaintances. To avoid this uneasiness, we ___10___ to our phones. "Phones become our security blanket," Wortmann says. "They are our happy glasses that protect us from what we perceive is going to be more ___11___."

But once we rip off the band-aid, tuck our smart phones in our pockets and look up, it doesn't ___12___ so bad. In one 2011 experiment, behavioral scientists Nicholas Epley and Juliana Schroeder asked commuters to do the unthinkable: Start a ___13___. They had Chicago train

commuters talk to their fellow ___14___. "When Dr. Epley and Ms. Schroeder asked other people in the same train station to ___15___ how they would feel after talking to a stranger, the commuters thought their ___16___ would be more pleasant if they sat on their own," *The New York Times* summarizes. Though the participants didn't expect a positive experience, after they ___17___ with the experiment, "not a single person reported having been embarrassed."

___18___, these commutes were reportedly more enjoyable compared with those without communication, which makes absolute sense, ___19___ human beings thrive off of social connections. It's that ___20___ : Talking to strangers can make you feel connected.

1．[A] signal    [B] permit    [C] ticket    [D] record
2．[A] nothing    [B] little    [C] another    [D] much
3．[A] beaten    [B] guided    [C] plugged    [D] brought
4．[A] sign    [B] code    [C] notice    [D] message
5．[A] under    [B] behind    [C] beyond    [D] from
6．[A] misapplied    [B] mismatched    [C] misadjusted    [D] misinterpreted
7．[A] replaced    [B] fired    [C] judged    [D] delayed
8．[A] unreasonable    [B] ungrateful    [C] unconventional    [D] unfamiliar
9．[A] comfortable    [B] confident    [C] anxious    [D] angry
10．[A] attend    [B] point    [C] take    [D] turn
11．[A] dangerous    [B] mysterious    [C] violent    [D] boring
12．[A] hurt    [B] resist    [C] bend    [D] decay
13．[A] lecture    [B] conversation    [C] debate    [D] negotiation
14．[A] passengers    [B] employees    [C] researchers    [D] trainees
15．[A] reveal    [B] choose    [C] predict    [D] design
16．[A] voyage    [B] ride    [C] walk    [D] flight
17．[A] went through    [B] did away    [C] caught up    [D] put up
18．[A] In turn    [B] In fact    [C] In particular    [D] In consequence
19．[A] unless    [B] since    [C] if    [D] whereas
20．[A] funny    [B] logical    [C] simple    [D] rare

## 2016 年真题

Happy people work differently. They're more productive, more creative, and willing to take greater risks. And new research suggests that happiness might influence ___1___ firms work, too.

Companies located in places with happier people invest more, according to a recent research paper ___2___, firms in happy places spend more on R&D (research and development). That's because happiness is linked to the kind of longer-term thinking ___3___ for making investments for the future.

The researchers wanted to know if the   4   and inclination for risk-taking that come with happiness would   5   the way companies invested. So they compared U.S. cities' average happiness   6   by Gallup polling with the investment activity of publicly traded firms in those areas.

   7   enough, firms' investment and R&D intensity were correlated with the happiness of the area in which they were   8  .But is it really happiness that's linked to investment, or could something else about happier cities   9   why firms there spend more on R&D? To find out, the researchers controlled for various   10   that might make firms more likely to invest – like size, industry, and sales – and for indicators that a place was   11   to live in, like growth in wages or population. The link between happiness and investment generally   12   even after accounting for these things.

The correlation between happiness and investment was particularly strong for younger firms, which the authors   13   to "less codified decision making process" and the possible presence of "younger and less   14   managers who are more likely to be influenced by sentiment." The relationship was   15   stronger in places where happiness was spread more 16 . Firms seem to invest more in places where most people are relatively happy, rather than in places with happiness inequality.

   17   this doesn't prove that happiness causes firms to invest more or to take a longer-term view, the authors believe it at least   18   at that possibility. It's not hard to imagine that local culture and sentiment would help   19   how executives think about the future. "It surely seems plausible that happy people would be more forward-thinking and creative and   20   R&D more than the average," said one researcher.

1. [A] why              [B] where              [C] how              [D] when
2. [A] In return        [B] In particular      [C] In contrast      [D] In conclusion
3. [A] sufficient       [B] famous             [C] perfect          [D] necessary
4. [A] individualism    [B] modernism          [C] optimism         [D] realism
5. [A] echo             [B] miss               [C] spoil            [D] change
6. [A] imagined         [B] measured           [C] invented         [D] assumed
7. [A] Sure             [B] Odd                [C] Unfortunate      [D] Often
8. [A] advertised       [B] divided            [C] overtaxed        [D] headquartered
9. [A] explain          [B] overstate          [C] summarize        [D] emphasize
10. [A] stages          [B] factors            [C] levels           [D] methods
11. [A] desirable       [B] sociable           [C] reputable        [D] reliable
12. [A] resumed         [B] held               [C] emerged          [D] broke
13. [A] attribute       [B] assign             [C] transfer         [D] compare
14. [A] serious         [B] civilized          [C] ambitious        [D] experienced
15. [A] thus            [B] instead            [C] also             [D] never
16. [A] rapidly         [B] regularly          [C] directly         [D] equally

17. [A] After      [B] Until      [C] While      [D] Since

18. [A] arrives      [B] jumps      [C] hints      [D] strikes

19. [A] shape      [B] rediscover      [C] simplify      [D] share

20. [A] pray for      [B] lean towards      [C] give away      [D] send out

## II Reading Comprehension

1.阅读必备常识

2.做题步骤

3.做题策略

4.真题实践

## 2018 年 Text 2

It is curious that Stephen Koziatek feels almost as though he has to justify his efforts to give his students a better future.

Mr. Koziatek is part of something pioneering. He is a teacher at a New Hampshire high school where learning is not something of books and tests and mechanical memorization, but practical. When did it become accepted wisdom that students should be able to name the 13th president of the United States but be utterly overwhelmed by a broken bike chain?

As Koziatek knows, there is learning in just about everything. Nothing is necessarily gained by forcing students to learn geometry at a graffitied desk stuck with generations of discarded chewing gum. They can also learn geometry by assembling a bicycle.

But he's also found a kind of insidious prejudice. Working with your hands is seen as almost a mark of inferiority. Schools in the family of vocational education "have that stereotype...that it's for kids who can't make it academically," he says.

On one hand, that viewpoint is a logical product of America's evolution. Manufacturing is not the economic engine that it once was. The job security that the US economy once offered to high school graduates has largely evaporated. More education is the new principle. We want more for our kids, and rightfully so.

But the headlong push into bachelor's degrees for all – and the subtle devaluing of anything less – misses an important point: That's not the only thing the American economy needs. Yes, a bachelor's degree opens more doors. But even now, 54 percent of the jobs in the country are middle-skill jobs, such as construction and high-skill manufacturing. But only 44 percent of workers are adequately trained.

In other words, at a time when the working class has turned the country on its political head, frustrated that the opportunity that once defined America is vanishing, one obvious solution is

staring us in the face. There is a gap in working-class jobs, but the workers who need those jobs most aren't equipped to do them. Koziatek's Manchester School of Technology High School is trying to fill that gap.

Koziatek's school is a wake-up call. When education becomes one-size-fits-all, it risks overlooking a nation's diversity of gifts.

21.A broken bike chain is mentioned to show students' lack of _____.

A.practical ability

B.academic training

C.pioneering spirit

D.mechanical memorization

22.There exists the prejudice that vocational education is for kids who _____.

A.have a stereotyped mind

B.have no career motivation

C.are not academically successful

D.are financially disadvantaged

23.We can infer from Paragraph 5 that high school graduates _____.

A.used to have big financial concerns

B.used to have more job opportunities

C.are reluctant to work in manufacturing

D.are entitled to more educational privileges

24.The headlong push into bachelor's degrees for all _____.

A.helps create a lot of middle-skill jobs

B.may narrow the gap in working-class jobs

C.is expected to yield a better-trained workforce

D.indicates the overvaluing of higher education

25.The author's attitude toward Koziatek's school can be described as _____.

A.supportive

B.tolerant

C.disappointed

D.cautious

## 2018 年 Text 2

While fossil fuels – coal, oil, gas – still generate roughly 85 percent of the world's energy supply, it's clearer than ever that the future belongs to renewable sources such as wind and solar. The move to renewables is picking up momentum around the world: They now account

for more than half of new power sources going on line.

Some growth stems from a commitment by governments and farsighted businesses to fund cleaner energy sources. But increasingly the story is about the <u>plummeting</u> prices of renewables, especially wind and solar. The cost of solar panels has dropped by 80 percent and the cost of wind turbines by close to one-third in the past eight years.

In many parts of the world renewable energy is already a principal energy source. In Scotland, for example, wind turbines provide enough electricity to power 95 percent of homes. While the rest of the world takes the lead, notably China and Europe, the United States is also seeing a remarkable shift. In March, for the first time, wind and solar power accounted for more than 10 percent of the power generated in the US, reported the US Energy Information Administration.

President Trump has underlined fossil fuels – especially coal – as the path to economic growth. In a recent speech in Iowa, he dismissed wind power as an unreliable energy source. But that message did not play well with many in Iowa, where wind turbines dot the fields and provide 36 percent of the state's electricity generation – and where tech giants like Microsoft are being attracted by the availability of clean energy to power their data centers.

The question "what happens when the wind doesn't blow or the sun doesn't shine?" has provided a quick put-down for skeptics. But a boost in the storage capacity of batteries is making their ability to keep power flowing around the clock more likely.

The advance is driven in part by vehicle manufacturers, who are placing big bets on battery-powered electric vehicles. Although electric cars are still a rarity on roads now, this massive investment could change the picture rapidly in coming years.

While there's a long way to go, the trend lines for renewables are spiking. The pace of change in energy sources appears to be speeding up – perhaps just in time to have a meaningful effect in slowing climate change. What Washington does – or doesn't do – to promote alternative energy may mean less and less at a time of a global shift in thought.

26.The word "plummeting" (Line 3, Para. 2) is closest in meaning to _____.
A.rising
B.falling
C.changing
D.stabilizing
27.According to Paragraph 3, the use of renewable energy in America _____.
A.is as extensive as in Europe
B.is progressing notably
C.has proved to be impractical
D.faces many challenges
28.It can be learned that in Iowa, _____.

A.wind energy has replaced fossil fuels

B.there is a shortage of clean energy supply

C.tech giants are investing in clean energy

D.wind is a widely used energy source

29.Which of the following is true about clean energy according to Paragraphs 5 & 6?

A.Its application has boosted battery storage.

B.It is commonly used in car manufacturing.

C.Its continuous supply is becoming a reality.

D.Its sustainable exploitation will remain difficult.

30.It can be inferred from the last paragraph that renewable energy _____.

A.is not really encouraged by the US government

B.is not competitive enough with regard to its cost

C.will bring the US closer to other countries

D.will accelerate global environmental change

## 2010 年 Text 2

　　I was addressing a small gathering in a suburban Virginia living room -- a women's group that had invited men to join them. Throughout the evening, one man had been particularly talkative, frequently offering ideas and anecdotes, while his wife sat silently beside him on the couch. Toward the end of the evening, I commented that women frequently complain that their husbands don't talk to them. This man quickly nodded in agreement. He gestured toward his wife and said, "She's the talker in our family." The room burst into laughter; the man looked puzzled and hurt. "It's true," he explained. "When I come home from work I have nothing to say. If she didn't keep the conversation going, we'd spend the whole evening in silence."

　　This episode crystallizes the irony that although American men tend to talk more than women in public situations, they often talk less at home. And this pattern is wreaking havoc with marriage.

The pattern was observed by political scientist Andrew Hacker in the late 1970s. Sociologist Catherine Kohler Riessman reports in her new book Divorce Talk that most of the women she interviewed -- but only a few of the men -- gave lack of communication as the reason for their divorces. Given the current divorce rate of nearly 50 percent that amounts to millions of cases in the United States every year -- a virtual epidemic of failed conversation.

　　In my own research, complaints from women about their husbands most often focused not on tangible inequities such as having given up the chance for a career to accompany a husband to his ,or doing far more than their share of daily life-support work like cleaning, cooking and social arrangements. Instead, they focused on communication: "He doesn't listen to me." "He doesn'

t talk to me." I found, as Hacker observed years before, that most wives want their husbands to be, first and foremost, conversational partners, but few husbands share this expectation of their wives.

In short, the image that best represents the current crisis is the stereotypical cartoon scene of a man sitting at the breakfast table with a newspaper held up in front of his face, while a woman glares at the back of it, wanting to talk.

26. What is most wives' main expectation of their husbands?

[A] Talking to them.

[B] Trusting them.

[C] Supporting their careers.

[D] Sharing housework

27. Judging from the context, the phrase "wreaking havoc" (Line2, Para.2)most probably means _____.

[A] generating motivation

[B] exerting influence

[C] causing damage

[D] creating pressure

28. All of the following are true EXCEPT _____.

[A] men tend to talk more in public than women

[B] nearly 50 percent of recent divorces are caused by failed conversation

[C] women attach much importance to communication between couples

[D] a female tends to be more talkative at home than her spouse

29. Which of the following can best summarize the main idea of this text?

[A] The moral decaying deserves more research by sociologists.

[B] Marriage break-up stems from sex inequalities.

[C] Husband and wife have different expectations from their marriage.

[D] Conversational patterns between man and wife are different.

30. In the following part immediately after this text, the author will most probably focus on _____.

[A] a vivid account of the new book Divorce Talk

[B] a detailed description of the stereotypical cartoon

[C] other possible reasons for a high divorce rate in the US

[D] a brief introduction to the political scientist Andrew Hacker

## 2010 年 Text 1

The longest bull run in a century of art-market history ended on a dramatic note with a sale of 56 works by Damien Hiret, "Beautiful Inside My Head Forever", at Sotheby's in London on September 15th 2008. All but two pieces sold, fetching more than £70m, a record for a sale by a single artist. It was a last victory. As the auctioneer called out bids, in New York one of the oldest banks on Wall Street, Lehman Brother, filed for bankruptcy.

The world art market had already been losing momentum for a while after rising bewilderingly since 2003. At its peak in 2007 it was worth some $65 billion, reckons Clare McAndrew, founder of art Economics, a research firm -- double the figure five year earlier. Since then it may have come down to $50 billion. But the market generates interest far beyond its size because it brings together great wealth, enormous egos, greed, passion and controversy in a way matched by few other industries.

In the weeks and months that followed Mr.Hirst's sale, spending of any sort became deeply unfashionable. In the art world that meant collectors stayed away from galleries and salerooms. Sale of contemporary art fell by two-thirds, and in the most overheated sector, they were down by nearly 90％ in the year to November 2008.Within weeks the world's two biggest auction houses, Sotheby's and Christie's, had to pay out nearly $200m in guarantees to clients who had placed works for sale with them.

The current downturn in the art market is the worst since the Japanese stopped buying Impressionists at the end of 1989.This time experts reckon that prices are about 40％ down on their peak on average, though some have been far more fluctuant. But Edward Dolman, Christe's chief executive, says: "I'm pretty confident we're at the bottom."

What makes this slump different from the last, he says, is that there are still buyers in the market. Almost everyone who was interviewed for this special report said that the biggest problem at the moment is not a lack of demand but a lack of good work to sell. The three Ds -- death, debt and divorce -- still deliver workers of art to the market. But anyone who does not have to sell is keeping away, waiting for confidence to return.

21. In the first paragraph, Damien Hirst's sale was referred to as "a last victory" because _____.

[A] the art marker had witnessed a succession of victories

[B] the auctioneer finally got the two pieces at the highest bids

[C] Beautiful inside My Head Forever won over all masterpieces

[D] it was successfully made just before the world financial crisis

22. By saying "spending of any sort became deeply unfashionable" (Line1-2,Para.3), the author suggests that_____.

[A] collectors were no longer actively involved art –market auctions

[B] people stopped every kind of spending and stayed away from galleries

[C] art collection as a fashion had lost its appeal to a great extent

[D] works of art in general had gone out of fashion so they were not worth buying

23. Which of the following statements is NOT true?

[A] Sales of contemporary art fell dramatically from 2007 to 2008

[B] The art market surpassed many other industries in momentum.

[C] The art market generally went downward in various ways.

[D] Some art dealers were awaiting better chances to come.

24. The three Ds mentioned in the last paragraph are _____.

[A] auction houses' favorites

[B] contemporary trends

[C] factors promoting artwork circulation

[D] styles representing Impressionists

25. The most appropriate title for this text could be _____.

[A] Fluctuation of Art prices

[B] Up-to-date Art Auctions

[C] Art Market in Decline

[D] Shifted Interest in Arts

## 2012 年 Text 1

Homework has never been terribly popular with students and even many parents, but in recent years it has been particularly scorned. School districts across the country, most recently Los Angeles Unified, are revising their thinking on his educational ritual. Unfortunately, L.A. Unified has produced an inflexible policy which mandates that with the exception of some advanced courses, homework may no longer count for more than 10% of a student's academic grade.

This rule is meant to address the difficulty that students from impoverished or chaotic homes might have in completing their homework. But the policy is unclear and contradictory. Certainly, no homework should be assigned that students cannot do compete on their own or that they cannot do without expensive equipment. But if the district is essentially giving a pass to students who do not do their homework because of complicated family lives, it is going riskily close to the implication that standards need to be lowered for poor children.

District administrators say that homework will still be a part of schooling: teachers are allowed to assign as much of it as they want. But with homework counting for no more than 10% of their grades, students can easily skip half their homework and see very little difference on their report cards. Some students might do well on state tests without completing their homework, but

what about the students who performed well on the tests and did their homework? It is quite possible that the homework helped. Yet rather than empowering teachers to find what works best for their students, the policy imposes a flat, across-the-board rule.

At the same time, the policy addresses none of the truly thorny questions about homework. If the district finds homework to be unimportant to its students' academic achievement, it should move to reduce or eliminate the assignments, not make them count for almost nothing. Conversely, if homework matter, it should account for a significant portion of the grade. Meanwhile, this policy does nothing to ensure that the homework students receive is meaningful or appropriate to their age and the subject, or that teachers are not assigning more than they are willing to review and correct.

The homework rules should be put on hold while the school board, which is responsible for setting educational policy, looks into the matter and conducts public hearings. It is not too late for L.A. Unified to do homework right.

21．It is implied in paragraph 1 that nowadays homework _____．

[A] is receiving more criticism

[B] is no longer an educational ritual

[C] is not required for advanced courses

[D] is gaining more preferences

22．L.A. Unified has made the rule about homework mainly because poor students _____．

[A] tend to have moderate expectations for their education

[B] have asked for a different educational standard

[C] may have problems finishing their homework

[D] have voiced their complaints about homework

23．According to Paragraph 3, one problem with the policy is that it may _____．

[A] discourage students from doing homework

[B] result in students' indifference to their report cards

[C] undermine the authority of state tests

[D] restrict teachers' power in education

24．As mentioned in Paragraph 4, a key question unanswered about homework is whether _____．

[A] it should be eliminated

[B] it counts much in schooling

[C] it places extra burdens on teachers

[D] it is important for grades

25．A suitable title for this text could be _____．

[A] Wrong Interpretation of an Educational Policy

[B] A Welcomed Policy for Poor Students

[C] Thorny Questions about Homework

[D] A Faulty Approach to Homework

## 2011 年 Text 1

Ruth Simmons joined Goldman Sachs's board as an outside director in January 2000; a year later she became president of Brown University. For the rest of the decade she apparently managed both roles without attracting much criticism. But by the end of 2009 Ms. Simmons was under fire for having sat on Goldman's compensation committee; how could she have let those enormous bonus payouts pass unremarked? By February the next year Ms. Simmons had left the board. The position was just taking up too much time, she said.

Outside directors are supposed to serve as helpful, yet less biased, advisers on a firm's board. Having made their wealth and their reputations elsewhere, they presumably have enough independence to disagree with the chief executive's proposals. If the sky, and the share price, is falling, outside directors should be able to give advice based on having weathered their own crises.

The researchers from Ohio University used a database that covered more than 10,000 firms and more than 64,000 different directors between 1989 and 2004. Then they simply checked which directors stayed from one proxy statement to the next. The most likely reason for departing a board was age, so the researchers concentrated on those "surprise" disappearances by directors under the age of 70. They found that after a surprise departure, the probability that the company will subsequently have to restate earnings increased by nearly 20%. The likelihood of being named in a federal class-action lawsuit also increases, and the stock is likely to perform worse. The effect tended to be larger for larger firms. Although a correlation between them leaving and subsequent bad performance at the firm is suggestive, it does not mean that such directors are always jumping off a sinking ship. Often they "trade up," leaving riskier, smaller firms for larger and more stable firms.

But the researchers believe that outside directors have an easier time of avoiding a blow to their reputations if they leave a firm before bad news breaks, even if a review of history shows they were on the board at the time any wrongdoing occurred. Firms who want to keep their outside directors through tough times may have to create incentives. Otherwise outside directors will follow the example of Ms. Simmons, once again very popular on campus.

21. According to Paragraph 1, Ms. Simmons was criticized for _____.

[A] gaining excessive profits

[B] failing to fulfill her duty

[C] refusing to make compromises

[D] leaving the board in tough times

22. We learn from Paragraph 2 that outside directors are supposed to be _____.

[A] generous investors

[B] unbiased executives

[C] share price forecasters

[D] independent advisers

23. According to the researchers from Ohio University after an outside director's surprise departure, the firm is likely to_____.

[A] become more stable

[B] report increased earnings

[C] do less well in the stock market

[D] perform worse in lawsuits

24. It can be inferred from the last paragraph that outside directors _____.

[A] may stay for the attractive offers from the firm

[B] have often had records of wrongdoings in the firm

[C] are accustomed to stress-free work in the firm

[D] will decline incentives from the firm

25. The author's attitude toward the role of outside directors is _____.

[A] permissive

[B] positive

[C] scornful

[D] critical

## 2011 年 Text 2

Whatever happened to the death of newspaper? A year ago the end seemed near. The recession threatened to remove the advertising and readers that had not already fled to the internet. Newspapers like the San Francisco Chronicle were chronicling their own doom. America's Federal Trade commission launched a round of talks about how to save newspapers. Should they become charitable corporations? Should the state subsidize them? It will hold another meeting soon. But the discussions now seem out of date.

In much of the world there is little sign of crisis. German and Brazilian papers have shrugged off the recession. Even American newspapers, which inhabit the most troubled corner of the global industry, have not only survived but often returned to profit. Not the 20% profit margins that were routine a few years ago, but profit all the same.

It has not been much fun. Many papers stayed afloat by pushing journalists overboard. The American Society of News Editors reckons that 13,500 newsroom jobs have gone since 2007.

Readers are paying more for slimmer products. Some papers even had the nerve to refuse delivery to distant suburbs. Yet these desperate measures have proved the right ones and, sadly for many journalists, they can be pushed further.

Newspapers are becoming more balanced businesses, with a healthier mix of revenues from readers and advertisers. American papers have long been highly unusual in their reliance on ads. Fully 87% of their revenues came from advertising in 2008, according to the Organization for Economic Cooperation & Development (OECD). In Japan the proportion is 35%. Not surprisingly, Japanese newspapers are much more stable.

The whirlwind that swept through newsrooms harmed everybody, but much of the damage has been concentrated in areas where newspapers are least distinctive. Car and film reviewers have gone. So have science and general business reporters. Foreign bureaus have been savagely cut off. Newspapers are less complete as a result. But completeness is no longer a virtue in the newspaper business.

26. By saying "Newspapers like … their own doom" (Lines 2-3, Para. 1), the author indicates that newspaper_____.

[A] neglected the sign of crisis

[B] failed to get state subsidies

[C] were not charitable corporations

[D] were in a desperate situation

27. Some newspapers refused delivery to distant suburbs probably because_____.

[A] readers threatened to pay less

[B] newspapers wanted to reduce costs

[C] journalists reported little about these areas

[D] subscribers complained about slimmer products

28. Compared with their American counterparts, Japanese newspapers are much more stable because they_____.

[A] have more sources of revenue

[B] have more balanced newsrooms

[C] are less dependent on advertising

[D] are less affected by readership

29. What can be inferred from the last paragraph about the current newspaper business?

[A] Distinctiveness is an essential feature of newspapers.

[B] Completeness is to blame for the failure of newspaper.

[C] Foreign bureaus play a crucial role in the newspaper business.

[D] Readers have lost their interest in car and film reviews.

30. The most appropriate title for this text would be_____.

[A] American Newspapers: Struggling for Survival

[B] American Newspapers: Gone with the Wind

[C] American Newspapers: A Thriving Business

[D] American Newspapers: A Hopeless Story

## 2011 年 Text 3

We tend to think of the decades immediately following World War II as a time of prosperity and growth, with soldiers returning home by the millions, going off to college on the G. I. Bill and lining up at the marriage bureaus.

But when it came to their houses, it was a time of common sense and a belief that less could truly be more. During the Depression and the war, Americans had learned to live with less, and that restraint, in combination with the postwar confidence in the future, made small, efficient housing positively stylish.

Economic condition was only a stimulus for the trend toward efficient living. The phrase "less is more" was actually first popularized by a German, the architect Ludwig Mies van der Rohe, who like other people associated with the Bauhaus, a school of design, emigrated to the United States before World War II and took up posts at American architecture schools. These designers came to exert enormous influence on the course of American architecture, but none more so that Mies.

Mies's signature phrase means that less decoration, properly organized, has more impact than a lot. Elegance, he believed, did not derive from abundance. Like other modern architects, he employed metal, glass and laminated wood-materials that we take for granted today buy that in the 1940s symbolized the future. Mies's sophisticated presentation masked the fact that the spaces he designed were small and efficient, rather than big and often empty.

The apartments in the elegant towers Mies built on Chicago's Lake Shore Drive, for example, were smaller-two-bedroom units under 1,000 square feet-than those in their older neighbors along the city's Gold Coast. But they were popular because of their airy glass walls, the views they afforded and the elegance of the buildings' details and proportions, the architectural equivalent of the abstract art so popular at the time.

The trend toward "less" was not entirely foreign. In the 1930s Frank Lloyd Wright started building more modest and efficient houses-usually around 1,200 square feet-than the spreading two-story ones he had designed in the 1890s and the early 20th century.

The "Case Study Houses" commissioned from talented modern architects by California Arts & Architecture magazine between 1945 and 1962 were yet another homegrown influence on the "less is more" trend. Aesthetic effect came from the landscape, new materials and forthright detailing. In his Case Study House, Ralph everyday life--few American families acquired

helicopters, though most eventually got clothes dryers--but his belief that self-sufficiency was both desirable and inevitable was widely shared.

31. The postwar American housing style largely reflected the Americans'  _____.

[A] prosperity and growth

[B] efficiency and practicality

[C] restraint and confidence

[D] pride and faithfulness

32. Which of the following can be inferred from Paragraph 3 about Bauhaus?

[A] It was founded by Ludwig Mies van der Rohe.

[B] Its designing concept was affected by World War II.

[C] Most American architects used to be associated with it.

[D] It had a great influence upon American architecture.

33. Mies held that elegance of architectural design_____.

[A] was related to large space

[B] was identified with emptiness

[C] was not reliant on abundant decoration

[D] was not associated with efficiency

34. What is true about the apartments Mies building Chicago's Lake Shore Drive?

[A] They ignored details and proportions.

[B] They were built with materials popular at that time.

[C] They were more spacious than neighboring buildings.

[D] They shared some characteristics of abstract art.

35. What can we learn about the design of the "Case Study House"?

[A] Mechanical devices were widely used.

[B] Natural scenes were taken into consideration

[C] Details were sacrificed for the overall effect.

[D] Eco-friendly materials were employed.

## 2011 年 Text 4

Will the European Union make it? The question would have sounded strange not long ago. Now even the project's greatest cheerleaders talk of a continent facing a "Bermuda triangle" of debt, population decline and lower growth.

As well as those chronic problems, the EU face an acute crisis in its economic core, the 16 countries that use the single currency. Markets have lost faith that the euro zone's economies,

weaker or stronger, will one day converge thanks to the discipline of sharing a single currency, which denies uncompetitive members the quick fix of devaluation.

Yet the debate about how to save Europe's single currency from disintegration is stuck. It is stuck because the euro zone's dominant powers, France and Germany, agree on the need for greater harmonization within the euro zone, but disagree about what to harmonies.

Germany thinks the euro must be saved by stricter rules on borrow spending and competitiveness, backed by quasi-automatic sanctions for governments that do not obey. These might include threats to freeze EU funds for poorer regions and EU mega-projects and even the suspension of a country's voting rights in EU ministerial councils. It insists that economic co-ordination should involve all 27 members of the EU club, among whom there is a small majority for free-market liberalism and economic rigour; in the inner core alone, Germany fears, a small majority favour French interference.

A "southern" camp headed by French wants something different: "European economic government" within an inner core of euro-zone members. Translated, that means politicians intervening in monetary policy and a system of redistribution from richer to poorer members, via cheaper borrowing for governments through common Eurobonds or complete fiscal transfers. Finally, figures close to the France government have murmured, euro-zone members should agree to some fiscal and social harmonization: e.g., curbing competition in corporate-tax rates or labour costs.

It is too soon to write off the EU. It remains the world's largest trading block. At its best, the European project is remarkably liberal: built around a single market of 27 rich and poor countries, its internal borders are far more open to goods, capital and labour than any comparable trading area. It is an ambitious attempt to blunt the sharpest edges of globalization, and make capitalism benign.

36. The EU is faced with so many problems that_____.

[A] it has more or less lost faith in markets

[B] even its supporters begin to feel concerned

[C] some of its member countries plan to abandon euro

[D] it intends to deny the possibility of devaluation

37. The debate over the EU's single currency is stuck because the dominant powers_____.

[A] are competing for the leading position

[B] are busy handling their own crises

[C] fail to reach an agreement on harmonization

[D] disagree on the steps towards disintegration

38. To solve the euro problem, Germany proposed that_____.

[A] EU funds for poor regions be increased

[B] stricter regulations be imposed

[C] only core members be involved in economic co-ordination

[D] voting rights of the EU members be guaranteed

39. The French proposal of handling the crisis implies that_____.

[A] poor countries are more likely to get funds

[B] strict monetary policy will be applied to poor countries

[C] loans will be readily available to rich countries

[D] rich countries will basically control Eurobonds

40. Regarding the future of the EU, the author seems to feel_____.

[A] pessimistic

[B] desperate

[C] conceited

[D] hopeful

## 2014 年 Text 4

When the government talks about infrastructure contributing to the economy the focus is usually on roads, railways, broadband and energy. Housing is seldom mentioned.

Why is that? To some extent the housing sector must shoulder the blame. We have not been good at communicating the real value that housing can contribute to economic growth. Then there is the scale of the typical housing project. It is hard to shove for attention among multibillion-pound infrastructure projects, so it is inevitable that the attention is focused elsewhere. But perhaps the most significant reason is that the issue has always been so politically charged.

Nevertheless, the affordable housing situation is desperate. Waiting lists increase all the time and we are simply not building enough new homes.

The comprehensive spending review offers an opportunity for the government to help rectify this. It needs to put historical prejudices to one side and take some steps to address our urgent housing need.

There are some indications that it is preparing to do just that. The communities minister, Don Foster, has hinted that George Osborne, Chancellor of the Exchequer, may introduce more flexibility to the current cap on the amount that local authorities can borrow against their housing stock debt. Evidence shows that 60,000 extra new homes could be built over the next five years if the cap were lifted, increasing GDP by 0.6%.

Ministers should also look at creating greater certainty in the rental environment, which would have a significant impact on the ability of registered providers to fund new developments from revenues.

But it is not just down to the government. While these measures would be welcome in the short term, we must face up to the fact that the existing £4.5bn programme of grants to fund new affordable housing, set to expire in 2015, is unlikely to be extended beyond then. The Labour Party has recently announced that it will retain a large part of the coalition's spending plans if it returns to power. The housing sector needs to accept that we are very unlikely to ever return to the era of large-scale public grants. We need to adjust to this changing climate.

While the government's commitment to long-term funding may have changed, the very pressing need for more affordable housing is real and is not going away.

36. The author believes that the housing sector _____.

[A] has attracted much attention

[B] involves certain political factors

[C] shoulders too much responsibility

[D] has lost its real value in economy

37. It can be learned that affordable housing has _____.

[A] increased its home supply

[B] offered spending opportunities

[C] suffered government biases

[D] disappointed the government

38. According to Paragraph 5, George Osborne may _____.

[A] allow greater government debt for housing

[B] stop local authorities from building homes

[C] prepare to reduce housing stock debt

[D] release a lifted GDP growth forecast

39. It can be inferred that a stable rental environment would _____.

[A] lower the costs of registered providers

[B] lessen the impact of government interference

[C] contribute to funding new developments

[D] relieve the minister of responsibilities

40. The author believes that after 2015, the government may _____.

[A] implement more policies to support housing

[B] review the need for large-scale public grants

[C] renew the affordable housing grants programme

[D] stop generous funding to the housing sector

**2015 年 Text 1**

A new study suggests that contrary to most surveys, people are actually more stressed at home than at work. Researchers measured people's cortisol, which is a stress marker, while they were at work and while they were at home and found it higher at what is supposed to be a place of refuge.

"Further contradicting conventional wisdom, we found that women as well as men have lower levels of stress at work than at home," writes one of the researchers, Sarah Damaske. In fact women even say they feel better at work, she notes, "It is men, not women, who report being happier at home than at work." Another surprise is that the findings hold true for both those with children and without, but more so for nonparents. This is why people who work outside the home have better health.

What the study doesn't measure is whether people are still doing work when they're at home, whether it is household work or work brought home from the office. For many men, the end of the workday is a time to kick back. For women who stay home, they never get to leave the office. And for women who work outside the home, they often are playing catch-up-with-household tasks. With the blurring of roles, and the fact that the home frontlags well behind the workplace in making adjustments for working women, it's not surprising that women are more stressed at home.

But it's not just a gender thing. At work, people pretty much know what they're supposed to be doing: working, making money, doing the tasks they have to do in order to draw an income. The bargain is very pure: Employee puts in hours of physical or mental labor and employee draws out life-sustaining moola.

On the home front, however, people have no such clarity. Rare is the household in which the division of labor is so clinically and methodically laid out. There are a lot of tasks to be done; there are inadequate rewards for most of them. Your home colleagues – your family – have no clear rewards for their labor; they need to be talked into it, or if they're teenagers, threatened with complete removal of all electronic devices. Plus, they're your family. You cannot fire your family. You never really get to go home from home

So it's not surprising that people are more stressed at home. Not only are the tasks apparently infinite, the co-workers are much harder to motivate.

21．According to Paragraph 1, most previous surveys found that home _____.

[A] offered greater relaxation than the workplace

[B] was an ideal place for stress measurement

[C] generated more stress than the workplace

[D] was an unrealistic place for relaxation

22．According to Damaske, who are likely to be the happiest at home?

[A] Childless wives.

[B] Working mothers.

[C] Childless husbands.

[D] Working fathers

23．The blurring of working woman＇s roles refers to the fact that _____．

[A] it is difficult for them to leave their office

[B] their home is also a place for kicking back

[C] there is often much housework left behind

[D] they are both bread winners and housewives

24．The word "moola" (Line3, Para.4) most probably means _____．

[A] skills

[B] energy

[C] earnings

[D] nutrition

25．The home front differs from the workplace in that _____．

[A] division of labor at home is seldom clear-cut

[B] home is hardly a cozier working environment

[C] household tasks are generally more motivating

[D] family labor is often adequately rewarded

## 2015 年 Text 2

For years, studies have found that first-generation college students – those who do not have a parent with a college degree – lag other students on a range of education achievement factors. Their grades are lower and their dropout rates are higher. But since such students are most likely to advance economically if they succeed in higher education, colleges and universities have pushed for decades to recruit more of them. This has created "a paradox" in that recruiting first-generation students, but then watching many of them fail, means that higher education has "continued to reproduce and widen, rather than close" an achievement gap based on social class, according to the depressing beginning of a paper forthcoming in the journal Psychological Science.

But the article is quite optimistic, as it outlines a potential solution to this problem, suggesting that an approach (which involves a one-hour, next-to-no-cost program) can close 63 percent of the achievement gap (measured by such factors as grades) between first-generation and other students.

The authors of the paper are from different universities, and their findings are based on a study involving 147 students (who completed the project) at an unnamed private university. First generation was defined as not having a parent with a four-year college degree. Most of the

first-generation students (59.1 percent) were recipients of Pell Grants, a federal grant for undergraduates with financial need, while this was true only for 8.6 percent of the students with at least one parent with a four-year degree.

Their thesis – that a relatively modest intervention could have a big impact – was based on the view that first-generation students may be most lacking not in potential but in practical knowledge about how to deal with the issues that face most college students. They cite past research by several authors to show that this is the gap that must be narrowed to close the achievement gap.

Many first-generation students "struggle to navigate the middle-class culture of higher education, learn the 'rules of the game,' and take advantage of college resources," they write. And this becomes more of a problem when colleges don't talk about the class advantages and disadvantages of different groups of students. "Because US colleges and universities seldom acknowledge how social class can affect students' educational experiences, many first-generation students lack insight about why they are struggling and do not understand how students 'like them' can improve."

26．Recruiting more first-generation students has _____.

[A] reduced their dropout rates

[B] narrowed the achievement gap

[C] depressed college students

[D] missed its original purpose

27．The authors of the research article are optimistic because _____.

[A] their findings appeal to students

[B] the recruiting rate has increased

[C] the problem is solvable

[D] their approach is costless

28．The study suggests that most first-generation students _____.

[A] study at private universities

[B] are from single-parent families

[C] are in need of financial support

[D] have failed their college

29．The authors of the paper believe that first-generation students _____.

[A] are actually indifferent to the achievement gap

[B] can have a potential influence on other students

[C] may lack opportunities to apply for research projects

[D] are inexperienced in handling their issues at college

30．We may infer from the last paragraph that _____.

[A] universities often reject the culture of the middle-class

[B] colleges are partly responsible for the problem in question

[C] social class greatly helps enrich educational experiences

[D] students are usually to blame for their lack of resources

## 2015 年 Text 3

Even in traditional offices, "the lingua franca of corporate America has gotten much more emotional and much more right-brained than it was 20 years ago," said Harvard Business School professor Nancy Koehn. She started spinning off examples. "if you and I parachuted back to Fortune 500 companies in 1990, we would see much less frequent use of terms like journey, mission, passion. There were goals, there were strategies, there were objectives, but we didn't talk about energy; we didn't talk about passion. "

Koehn pointed out that this new era of corporate vocabulary is very "team"-oriented – and not by coincidence. "Let's not forget sports – in male-dominated corporate America, it's still a big deal. It's not explicitly conscious, it's the idea that I'm a coach, and you're my team, and we're in this together. There are lots and lots of CEOs in very different companies, but most think of themselves as coaches and this is their team and they want to win."

These terms are intended to infuse work with meaning – and, as Khurana points out, increase allegiance to the firm. "You have the importation of terminology that historically used to be associated with non-profit organizations and religious organizations: Terms like vision, values, passion, and purpose," said Khurana.

This new focus on personal fulfillment can help keep employees motivated amid increasingly loud debates over work-life balance. The "mommy wars" of the 1990s are still going on today, prompting arguments about why women still can't have it all and books like Sheryl Sandberg's *Lean In*, whose title has become a buzzword in its own right. Terms like unplug, offline, life-hack, bandwidth, and capacity are all about setting boundaries between the office and the home. But if your work is your "passion", you'll be more likely to devote yourself to it, even if that means going home for dinner and then working long after the kids are in bed.

But this seems to be the irony of office speak: everyone makes fun of it, but managers love it, companies depend on it, and regular people willingly absorbs it. As Nunberg said, "You can get people to think it's nonsense at the same time that you buy into it." In a workplace that's fundamentally indifferent to your life and its meaning, office speak can help you figure out how you relate to your work – and how your work defines who you are.

31．According to Nancy Koehn, office language has become _____.

[A] more objective

[B] less energetic

[C] more emotional

[D] less strategic

32．"Team"-oriented corporate vocabulary is closely related to _____.

[A] sports culture

[B] gender difference

[C] historical incidents

[D] athletic executives

33．Khurana believes that the importation of terminology aims to _____.

[A] promote company image

[B] strengthen employee loyalty

[C] foster corporate cooperation

[D] revive historical terms

34．It can be inferred that *Lean In* _____.

[A] voices for working women

[B] appeals to passionate workaholics

[C] triggers debates among mommies

[D] praises motivated employees

35．Which of the following statements is true about office speak?

[A] Managers admire it but avoid it.

[B] Linguists believe it to be nonsense.

[C] Companies find it to be fundamental.

[D] Regular people mock it but accept it.

## 2016 年 Text 1

It's true that high-school coding classes aren't essential for learning computer science in college. Students without experience can catch up after a few introductory courses, said Tom Cortina, the assistant dean at Carnegie Mellon's School of Computer Science.

However, Cortina said, early exposure is beneficial. When younger kids learn computer science, they learn that it's not just a confusing, endless string of letters and numbers – but a tool to build apps, or create artwork, or test hypotheses. It's not as hard for them to transform their thought processes as it is for older students. Breaking down problems into bite-sized chunks and using code to solve them becomes normal. Giving more children this training could increase the number of people interested in the field and help fill the jobs gap, Cortina said.

Students also benefit from learning something about coding before they get to college, where introductory computer-science classes are packed to the brim, which can drive the less-experienced or-determined students away.

The Flatiron School, where people pay to learn programming, started as one of the many coding bootcamps that's become popular for adults looking for a career change. The high-schoolers get the same curriculum, but "we try to gear lessons toward things they're interested in," said Victoria Friedman, an instructor. For instance, one of the apps the students are developing suggests movies based on your mood.

The students in the Flatiron class probably won't drop out of high school and build the next Facebook. Programming languages have a quick turnover, so the "Ruby on Rails" language they learned may not even be relevant by the time they enter the job market. But the skills they learn – how to think logically through a problem and organize the results – apply to any coding language, said Deborah Seehorn, an education consultant for the state of North Carolina.

Indeed, the Flatiron students might not go into IT at all. But creating a future army of coders is not the sole purpose of the classes. These kids are going to be surrounded by computers-in their pockets ,in their offices, in their homes – for the rest of their lives, The younger they learn how computers think, how to coax the machine into producing what they want – the earlier they learn that they have the power to do that – the better.

21. Cortina holds that early exposure to computer science makes it easier to _____.

[A] complete future job training

[B] remodel the way of thinking

[C] formulate logical hypotheses

[D] perfect artwork production

22. In delivering lessons for high - schoolers, Flatiron has considered their_____.

[A] experience

[B] interest

[C] career prospects

[D] academic backgrounds

23. Deborah Seehorn believes that the skills learned at Flatiron will _____.

[A] help students learn other computer languages

[B] have to be upgraded when new technologies come

[C] need improving when students look for jobs

[D] enable students to make big quick money

24. According to the last paragraph, Flatiron students are expected to _____.

[A] bring forth innovative computer technologies

[B] stay longer in the information technology industry

[C] become better prepared for the digitalized world

[D] compete with a future army of programmers

25. The word "coax" (Line4,Para.6) is closest in meaning to _____.

[A] persuade

[B] frighten

[C] misguide

[D] challenge

## 新题型

1 做题步骤

2 注意事项

3 真题实践

## 18 年真题

A.Just say it

B.Be present

C.Skip the small talk

D.Ask for an opinion

E.Find the "me too"s

F.Name, places, things

G.Pay a unique compliment

### Five ways to make conversation with anyone

Conversations are links, which means when you have a conversation with a new person a link gets formed and every conversation you have after that moment will strengthen the link.

You meet new people every day: the grocery worker, the cab driver, new people at work or the security guard at the door. Simply starting a conversation with them will form a link.

Here are five simple ways that you can make the first move and start a conversation with strangers.

41. _____

Suppose you are in a room with someone you don't know and something within you says "I want to talk with this person" – this is something that mostly happens with all of us. You wanted to say something – the first word – but it just won't come out, it feels like it is stuck somewhere. I know the feeling and here is my advice: just get it out.

Just think: what is the worst that could happen? They won't talk with you? Well, they are not talking with you now!

I truly believe that once you get that first word out everything else will just flow. So keep it simple: "Hi", "Hey" or "Hello" – do the best you can to gather all of the enthusiasm and energy you can, put on a big smile and say "Hi".

42. _____

It's a problem all of us face; you have limited time with the person that you want to talk with and you want to make this talk memorable.

Honestly, if we got stuck in the rut of "hi", "hello", "how are you?" and "what's going on?", you will fail to give the initial jolt to the conversation that can make it so memorable.

So don't be afraid to ask more personal questions. Trust me, you'll be surprised to see how much people are willing to share if you just ask.

43. _____

When you meet a person for the first time, make an effort to find the things which you and that person have in common so that you can build the conversation from that point. When you start conversation from there and then move outwards, you'll find all of a sudden that the conversation becomes a lot easier.

44. _____

Imagine you are pouring your heart out to someone and they are just busy on their phone, and if you ask for their attention you get the response "I can multitask".

So when someone tries to communicate with you, just be in that communication wholeheartedly. Make eye contact. Trust me, eye contact is where all the magic happens. When you make eye contact, you can feel the conversation.

45. _____

You all came into a conversation where you first met the person, but after some time you may have met again and have forgotten their name. Isn't that awkward!

So, remember the little details of the people you met or you talked with; perhaps the places they have been to, the places they want to go, the things they like, the things they hate – whatever you talk about.


**17 年真题**

Read the following text and answer the questions by finding information from the right column that corresponds to each of the marked details given in the left column. There are two extra choices in the right column. Mark your answers on the ANSWER SHEET. (10 points)

The decline in American manufacturing is a common refrain, particularly from Donald Trump. "We don't, make anything anymore." he told Fox News, while defending his own made-in-Mexico clothing line.

Without question, manufacturing has taken a significant hit during recent decades, and further trade deals raise questions about whether new shocks could hit manufacturing.

But there is also a different way to look at the data.

Across the country, factory owners are now grappling with a new challenge: Instead of having too many workers, they may end up with too few. Despite trade competition and outsourcing. American manufacturing still needs to replace tens of thousands of retiring boomers every year. Millennial may not be that interested in taking their places. Other industries are recruiting them with similar or better pay.

For factory owners, it all adds up to stiff competition for workers -- and upward pressure on wages. "They're harder to find and they have job offers." says Jay Dunwell, president of Wolverine Coil Spring, a family-owned firm. "They may be coming into the workforce, but they've been plucked by other industries that are also doing as well as manufacturing." Mr. Dunwell has begun bringing high school juniors to the factory so they can get exposed to its culture.

At RoMan Manufacturing, a maker of electrical transformers and welding equipment that his father cofounded in 1980, Robert Roth keeps a close eye on the age of his nearly 200 workers. Five are retiring this year. Mr. Roth has three community-college students enrolled in a work-placement program, with a starting wage of $17 after two years.

At a worktable inside the transformer plant, young Jason Stenquist looks flustered by the copper coils he's trying to assemble and the arrival of two visitors. It's his first week on the job. Asked about his choice of career, he says at high school he considered medical school before switching to electrical engineering. "I love working with tools. I loving creating." He says.

But to win over these young workers, manufacturing have to clear another major hurdle: parents, who lives through the worst US economic downtown since the Great Depression, telling them to avoid the factory. Millennials "remember their father and mother both were laid off. They blame it on the manufacturing recessions." says Brigit Klohs, chief executive of The Right Place, a business development agency western Michigan.

These concerns aren't misplaced: Employment in manufacturing has fallen from 17 million in 1970 to 12 million in 2015. When the recovery began, worker strangers first appeared in the high-skilled trades. Now shortages are appearing at the mid-skilled levels.

"The gap is between the jobs that take on skill and those that require a lot of skills." says rob Spohr, a business professor at Montcalm Community College. "There're enough people to fill the jobs at McDonalds and other places where you don't need to have much skill. It's that gap in between, and that's where the problem is."

Julie parks of Grand Rapids Community College points to another key to luring Millennials into manufacturing: a worker life balance. While their parents were content to work long hours, young people value flexibility. "Overtime is not attractive to this generation. They really want to live their lives," she says.

| | [A] believe that it is important to keep a close eye on the age of his workers |
|---|---|
| 41.Jay Dunwell | [B] says that the manufacturing recession is to blame for the layoff of the young people's parents. |
| 42.Jason Stenquist | [C] says that for factory owners, workers are harder to find because of stiff competition. |
| 43.Birgit Klohs | [D]says that he switched to electrical engineering because he loves working with tools |
| 44. Rob Spohr | [E] points out that the US doesn't manufacture anything anymore |
| 45. Julie Parks | [F] points out that there are enough people to fill the jobs that don't need much skill. |
| | [G] points out that a worker life balance can attract young people into manufacturing. |

## 16 年真题

Read the following text and answer the questions by choosing the most suitable subheading from the list A-G for each numbered paragraph (41-45). There are two extra subheadings which you do not need to use. Mark your answers on the ANSWER SHEET. (10 points)

[A] Be silly

[B] Have fun

[C] Express your emotions

[D] Don't overthink it

[E] Be easily pleased

[F] Notice things

[G] Ask for help

As adults, it seems that we are constantly pursuing happiness, often with mixed results. Yet children appear to have it down to an art-and for the most part they don't need self-help books or therapy. Instead, they look after their wellbeing instinctively, and usually more effectively than we do as grownups. Perhaps it's time to learn a few lessons from them.

41._____

What does a child do when he's sad? He cries. When he's angry? He shouts. Scared? Probably a bit of both. As we grow up, we learn to control our emotions so they are manageable and don't dictate our behaviors, which is in many ways a good thing. But too often we take this process too far and end up suppressing emotions, especially negative ones. That's about as effective as brushing dirt under a carpet and can even make us ill. What we need to do is find a way to acknowledge and express what we feel appropriately, and then-again, like children-move.

42. _____

A couple of Christmases ago, my youngest stepdaughter, who was nine years old at the time, got a Superman T-shirt for Christmas. It cost less than a fiver but she was overjoyed, and couldn't stop talking about it. Too often we believe that a new job, bigger house or better car will be the magic silver bullet that will allow us to finally be content, but the reality is these things have very little lasting impact on our happiness levels. Instead, being grateful for small things every day is a much better way to improve wellbeing.

43. _____

Have you ever noticed how much children laugh? If we adults could indulge in a bit of silliness and giggling, we would reduce the stress hormones in our bodies increase good hormones like endorphins, improve blood flow to our hearts and even have a greater chance of fighting off infection. All of which, of course, have a positive effect on happiness levels.

44. _____

The problem with being a grown up is that there's an awful lot of serious stuff to deal with-work, mortgage payments, figuring out what to cook for dinner. But as adults we also have the luxury of being able to control our own diaries and it's important that we schedule in time to enjoy the things we love. Those things might be social, sporting, creative or completely random (dancing around the living room, anyone?)--it doesn't matter, so long as they're enjoyable, and not likely to have negative side effects, such as drinking too much alcohol or going on a wild spending spree if you're on a tight budget.

45. _____

Having said all of the above, it's important to add that we shouldn't try too hard to be happy. Scientists tell us this can backfire and actually have a negative impact on our wellbeing. As the Chinese philosopher Chuang Tzu is reported to have said:"Happiness is the absence of striving for happiness."And in that, once more, we need to look to the example of our children, to whom happiness is not a goal but a natural byproduct of the way they live.

**2015 年真题**

[A] You are not alone

[B] Don't fear responsibility for your life

[C] Pave your own unique path

[D] Most of your fears are unreal

[E] Think about the present moment

[F] Experience helps you grow

[G] There are many things to be grateful for

### Some Old Truths to Help You Overcome Tough Times

Unfortunately, life is not a bed of roses. We are going through life facing sad experiences. Moreover, we are grieving various kinds of loss: a friendship, a romantic relationship or a house. Hard times may hold you down at what usually seems like the most inopportune time, but you should remember that they won's t last forever.

When our time of mourning is over, we press forward, stronger with a greater understanding and respect for life. Furthermore, these losses make us mature and eventually move us toward future opportunities for growth and happiness. I want to share these old truths I've learned along the way.

41. _____

Fear is both useful and harmful. This normal human reaction is used to protect us by signaling danger and preparing us to deal with it. Unfortunately, people create inner barriers with a help of exaggerating fears. My favorite actor Will Smith once said, "Fear is not real. It is a product of thoughts you create. Do not misunderstand me. Danger is very real. But fear is a choice." I do completely agree that fears are just the product of our luxuriant imagination.

42. _____

If you are surrounded by problems and cannot stop thinking about the past, try to focus on the present moment. Many of us are weighed down by the past or anxious about the future. You may feel guilt over your past, but you are poisoning the present with the things and circumstances you cannot change. Value the present moment and remember how fortunate you are to be alive. Enjoy the beauty of the world around and keep the eyes open to see the possibilities before you. Happiness is not a point of future and not a moment from the past, but a mindset that can be designed into the present.

43. _____

Sometimes it is easy to feel bad because you are going through tough times. You can be easily caught up by life problems that you forget to pause and appreciate the things you have. Only strong people prefer to smile and value their life instead of crying and complaining about something.

44. _____

No matter how isolated you might feel and how serious the situation is, you should always remember that you are not alone. Try to keep in mind that almost everyone respects and wants to help you if you are trying to make a good change in your life, especially your dearest and nearest

people. You may have a circle of friends who provide constant good humor, help and companionship. If you have no friends or relatives, try to participate in several online communities, full of people who are always willing to share advice and encouragement.

45. _____

Today many people find it difficult to trust their own opinion and seek balance by gaining objectivity from external sources. This way you devalue your opinion and show that you are incapable of managing your own life. When you are struggling to achieve something important you should believe in yourself and be sure that your decision is the best. You live in your skin, think your own thoughts, have your own values and make your own choices.

## 2014 年真题

Emerging in the late Sixties and reaching a peak in the Seventies, Land Art was one of a range of new forms, including Body Art, Performance Art, Action Art and Installation Art, which pushed art beyond the traditional confines of the studio and gallery. Rather than portraying landscape, land artists used the physical substance of land itself as their medium.

The British land artist, typified by Richard Long's piece, was not only more domestically scaled, but a lot quirkier than its American counterpart. Indeed, while you might assume that an exhibition of Land Art would consist only of records of works rather than the works themselves, Long's photograph of his work is the work. Since his "action" is in the past the photograph is its sole embodiment.

That might seem rather an obscure point, but it sets the tone for an exhibition that contains a lot of black-and-white photographs and relatively few natural objects. Long is Britain's best-known Land Artist and his Stone Circle, a perfect ring of purplish rocks from Portishead beach laid out on the gallery floor, represents the elegant, rarefied side of the form. The Boyle Family, on the other hand, stands for its dirty, urban aspect. Comprising artists Mark Boyle and Joan Hills and their children, they recreated random sections of the British landscape on gallery walls. Their Olaf Street Study, a square of brick-strewn waste ground, is one of the few works here to embrace the mundanity that characterizes most of our experience of the landscape most of the time.

Parks feature, particularly in the earlier works, such as John Hilliard's very funny Across the Park, in which a long-haired stroller is variously smiled at by a pretty girl and unwittingly assaulted in a sequence of images that turn out to be different parts of the same photograph.

Generally however British land artists preferred to get away from towns, gravitating towards landscapes that are traditionally considered beautiful such as the Lake District or the Wiltshire Downs. While it probably wasn't apparent at the time, much of this work is permeated by a spirit of romantic escapism that the likes of Wordsworth would have readily understood. Derek

Jarman's yellow-tinted film Towards Avebury, a collection of long, mostly still shots of the Wiltshire landscape, evokes a tradition of English landscape painting stretching from Samuel Palmer to Paul Nash.

In the case of Hamish Fulton, you can't help feeling that the Scottish artist has simply found a way of making his love of walking pay. A typical work, such as Seven Days, consists of a single beautiful black-and-white photograph taken on an epic walk, with the mileage and number of days taken listed beneath. British Land Art as shown in this well selected, but relatively modestly scaled exhibition wasn't about imposing on the landscape, more a kind of landscape-orientated light conceptual art created passing through. It had its origins in the great outdoors, but the results were as gallery-bound as the paintings of Turner and Constable.

| | |
|---|---|
| | [A] originates from a long walk that the artist took. |
| 41．Stone Circle | [B] illustrates a kind of landscape-orientated light conceptual art. |
| 42．Olaf Street Study | [C] reminds people of the English landscape painting tradition. |
| 43．Across the Park | [D] represents the elegance of the British land art. |
| 44．Towards Avebury | [E] depicts the ordinary side of the British land art. |
| 45．Seven Days | [F] embodies a romantic escape into the Scottish outdoors. |
| | [G] contains images from different parts of the same photograph. |

**Translation**

**2010 年真题**

"Sustainability" has become a popular word these days, but to Ted Ning, the concept will always have personal meaning. Having endured a painful period of unsustainability in his own life made it clear to him that sustainability-oriented values must be expressed through everyday action and choice.

Ning recalls spending a confusing year in the late 1990s selling insurance. He'd been through the dot-com boom and bust and, desperate for a job, signed on with a Boulder agency.

It didn't go well. "It was a really bad move because that's not my passion," says Ning, whose dilemma about the job translated, predictably, into a lack of sales. "I was miserable. I had so much anxiety that I would wake up in the middle of the night and stare at the ceiling. I had no money and needed the job. Everyone said, 'Just wait, you'll turn the corner, give it some time.'

**2011 年真题**

Who would have thought that, globally, the IT industry produces about the same volumes of greenhouse gases as the world's airlines do-rough 2 percent of all $CO_2$ emissions?

Many everyday tasks take a surprising toll on the environment. A Google search can leak between 0.2 and 7.0 grams of $CO_2$ depending on how many attempts are needed to get the "right" answer. To deliver results to its users quickly, then, Google has to maintain vast data centres round the world, packed with powerful computers. While producing large quantities of $CO_2$, these computers emit a great deal of heat, so the centres need to be well air-conditioned, which uses even more energy.

However, Google and other big tech providers monitor their efficiency closely and make improvements. Monitoring is the first step on the road to reduction, but there is much to be done, and not just by big companies.

## 2012 年真题

When people in developing countries worry about migration, they are usually concerned at the prospect of their best and brightest departure to Silicon Valley or to hospitals and universities in the developed world. These are the kind of workers that countries like Britain, Canada and Australia try to attract by using immigration rules that privilege college graduates.

Lots of studies have found that well-educated people from developing countries are particularly likely to emigrate. A big survey of Indian household in 2004 found that nearly 40% of emigrants had more than a high-school education, compared with around 3.3% of all Indian over the age of 25. This "brain drain" has long bothered policymakers in poor counties. They fear that it hurts their economies, depriving them of much-needed skilled workers who could have taught at their universities, worked in their hospitals and come up with clever new products for their factories to make.

## 2013 年真题

I can pick a date from the past 53 years and know instantly where I was, what happened in the news and even the day of the week, I've been able to do this, since I was four.

I never feel overwhelmed with the amount of information my brain absorbs. My mind seems to be able to cope and the information is stored away neatly. When I think of a sad memory, I do what everybody does -- try to put it to one side. I don't think it's harder for me just because my memory is clearer. Powerful memory doesn't make my emotions any more acute or vivid. I can recall the day my grandfather died and the sadness I felt when we went to the hospital the day

before. I also remember that the musical play Hair opened on Broadway on the same day -- they both just pop into my mind in the same way.

## 2014 年真题

Most people would define optimism as being endlessly happy, with a glass that's perpetually half full. But that's exactly the kind of false cheerfulness that positive psychologists wouldn't recommend. "Healthy optimism means being in touch with reality", says Tal Ben-Shahar, a Harvard professor. According to Ben-Shahar, realistic optimists are those who make the best of things that happen, but not those who believe everything happens for the best.

In his own life, Ben-Shahar uses three optimistic exercises, which he calls PRP. When he feels down -- say, after giving a bad lecture -- he grants himself permission (P) to be human. He reminds himself that not every lecture can be a Nobel winner; some will be less effective than others. Next is reconstruction (R). He analyzes the weak lecture, learning lessons for the future about what works and what doesn't. Finally, there is perspective (P), which involves acknowledging that in the grand scheme of life, one lecture really doesn't matter.

## 2015 年真题

Think about driving a route that's very familiar. It could be your commute to work, a trip into town or the way home. Whichever it is, you know every twist and turn like the back of your hand. On these sorts of trips it's easy to lose concentration on the driving and pay little attention to the passing scenery. The consequence is that you perceive that the trip has taken less time than it actually has.

This is the well-travelled road effect: People tend to underestimate the time it takes to travel a familiar route.

The effect is caused by the way we allocate our attention. When we travel down a well-known route, because we don't have to concentrate much, time seems to flow more quickly. And afterwards, when we come to think back on it, we can't remember the journey well because we didn't pay much attention to it. So we assume it was shorter.

## 2016 年真题

The supermarket is designed to lure customers into spending as much time as possible within its doors. The reason for this is simple: The longer you stay in the store, the more stuff you'll see, and the more stuff you see, the more you'll buy. And supermarkets contain a lot of

stuff. The average supermarket, according to the Food Marketing Institute, carries some 44,00 different items, and many carry tens of thousands more. The sheer volume of available choice is enough to send shoppers into a state of information overload. According to brain-scan experiments, the demands of so much decision-making quickly become too much for us. After about 40 minutes of shopping, most people stop struggling to be rationally selective, and instead begin shopping emotionally - which is the point at which we accumulate the 50 percent of stuff in our cart that we never intended buying.

## 2017 年真题

My dream has always been to work somewhere in an area between fashion and publishing. Two years before graduating from secondary school, I took a sewing and design course thinking that I would move on to a fashion design course. However, during that course I realized I was not good enough in this area to compete with other creative personalities in the future, so I decided that it was not the right path for me. Before applying for university I told everyone that I would study journalism, because writing was, and still is, one of my favorite activities. But, to be honest, I said it, because I thought that fashion and me together was just a dream -- I knew that no one could imagine me in the fashion industry at all! So I decided to look for some fashion-related courses that included writing. This is when I noticed the course "Fashion Media & Promotion."

## 2018 年真题

A fifth grader gets a homework assignment to select his future career path from a list of occupations. He ticks "astronaut" but quickly adds "scientist" to the list and selects it as well. The boy is convinced that if he reads enough, he can explore as many career paths as he likes. And so he reads – everything from encyclopedias to science fiction novels. He reads so passionately that his parents have to institute a "no reading policy" at the dinner table.

That boy was Bill Gates, and he hasn't stopped reading yet – not even after becoming one of the most successful people on the planet. Nowadays, his reading material has changed from science fiction and reference books: recently, he revealed that he reads at least 50 nonfiction books a year. Gates chooses nonfiction titles because they explain how the world works. "Each book opens up new avenues of knowledge," Gates says.

**IV Writing 小作文**

**2010 年**

　　You have just come back from the U.S. as a member of a Sino-American cultural exchange program. Write a letter to your American colleague to

　　　　1) express your thanks for his/her warm reception;

　　　　2) welcome him/her to visit China in due course.

You should write about 100 words on ANSWER SHEET.

Do not sign your own name at the end of the letter. Use "Zhang Wei" instead.

Do not write your address. (10 points)

**2011 年**

　　Suppose your cousin Li Ming has just been admitted to a university. Write him/her a letter to

　　　　1）congratulate him/her, and

　　　　2）give him/her suggestions on how to get prepared for university life.

You should write about 100 words on ANSWER SHEET.

Do not sign your own name at the end of the letter. Use "Zhang Wei" instead.

Do not write the address.(10 points)

**2018 年**

　　Suppose you have to cancel your travel plan and will not be able to visit Professor Smith, Write him an email to

　　1）apologize and explain the situation, and

　　2）suggest a future meeting.

You should write about 100 words on the ANSWER SHEET.
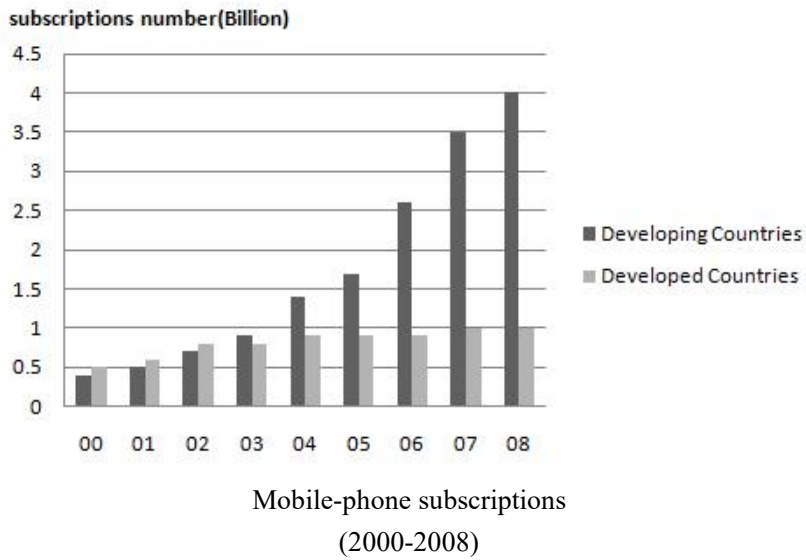
Do not use your own name. Use "Li Ming" instead.

Do not write your address.（10 points）

**大作文真题**

**2010 年**

　　In this section, you are asked to write an essay based on the following chart. In your writing, you should

　　1) interpret the chart and

　　2) give your comments.

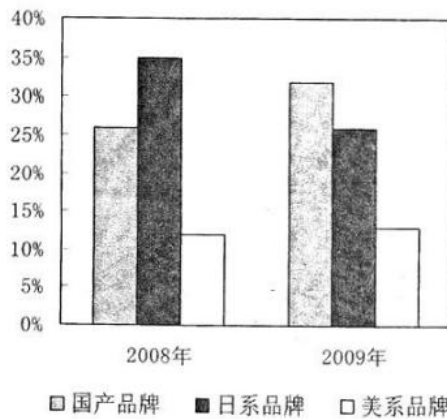You should write at least 150 words,Write your essay on ANSWER SHEET. (15points)

Mobile-phone subscriptions
(2000-2008)

**2011 年**

Write an essay based on the following chart. In your writing, you should

　　1）interpret the chart and

　　2）give your comments

You should write at least 150 words.Write your essay on ANSWER SHEET .(15 points)



2008、2009 年国内轿车市场部分品牌市场份额示意图

**2012 年**

Write an essay based on the following table. In your writing, you should

　　1) describe the table, and

　　2) give your comments

You should write at least 150 words. (15points)

<div align="center">某公司员工工作满意度调查</div>

| 年龄/满意度 | 满意 | 不清楚 | 不满意 |
|---|---|---|---|
| 小于等于 40 岁 | 16.7% | 50.0% | 33.3% |
| 41-50 岁 | 0.0% | 36.0% | 64.0% |
| 大于 50 岁 | 40.0% | 50.0% | 10.0% |

**2013 年**

Write an essay based on the following chart. In your writing, you should

　　1) interpret the chart , and

　　2) give your comments.

You should write about 150 words on the ANSWER SHEET．(15 points)



某高校学生兼职情况

**2014 年**

Write an essay based on the following chart. In your essay, you should

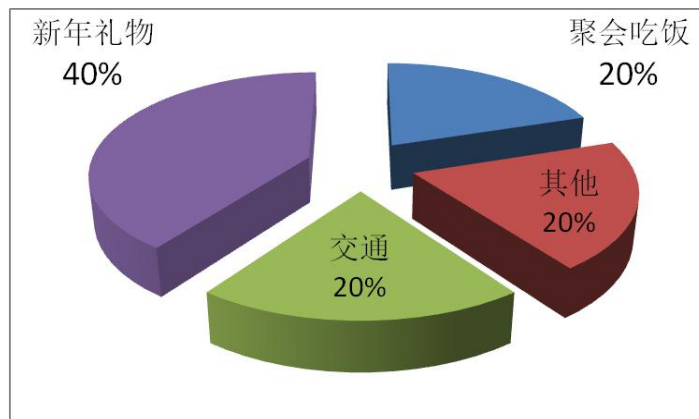    1) interpret the chart, and

    2) give your comments.

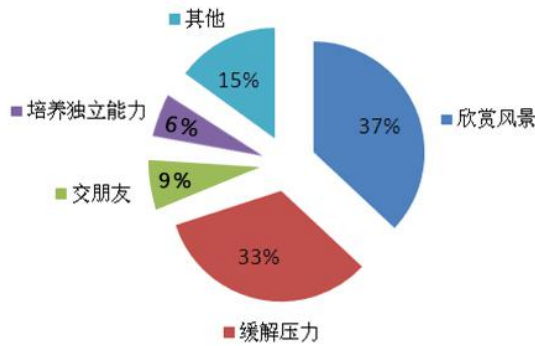You should write about 150 words on the ANSWER SHEET. (15points)



**2015 年**

Write an essay based on the following chart. In your essay, you should

    1) interpret the chart, and

    2) give your comments.

You should write about 150 words on the **ANSWER SHEET**. (15points)



**我国某市居民春节假期花销比例**

**2016 年**

Write an essay based on the following chart. In your writing, you should

    1) interpret the chart, and

    2) give your comments.

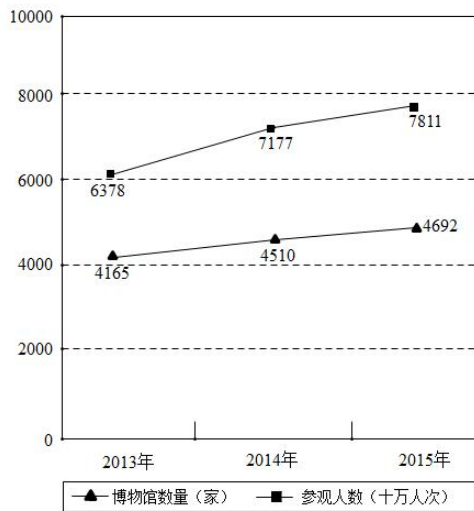You should write about 150 words on the ANSWER SHEET. (15points)



某高校学生旅行目的的调查

**2017 年**

Write an essay based on the chart below. In your writing, you should

    1) interpret the chart, and

    2) give your comments.

You should write about 150 words on the ANSWER SHEET. (15 points)



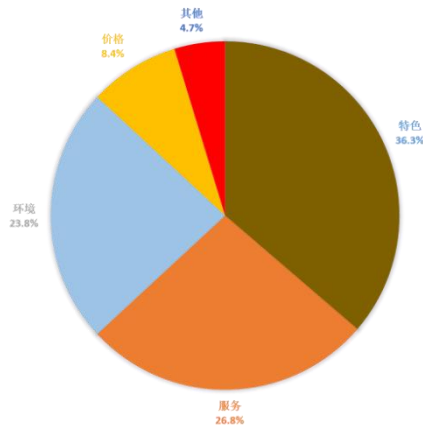2013-2015 年我国博物馆数量和参观人数

2018 年

Write an essay based on the chart below. In your writing, you should

    1) interpret the chart, and

    2) give your comments.

You should write about 150 words on the ANSWER SHEET.(15 points)



2017年某市消费者选择餐厅时的关注因素

**2019 年**

in this sections, you are asked to write an essay based on the following chart:

    1）interpret the chart, and

    2）give your comments.

You should write at least 150 words. Write your essay on the ANSWER SHEET.（15 points）