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第二部分

计 分 程 序

第 9 章 SAS 系统内四种计分程序概述

9.1 四种计分程序

本章将简介四种计分程序，即：

```
PROC STANDARD;  
PROC RANK;  
PROC SCORE;  
MACRO ITEM;
```

(请读者注意，本书第二版中所提到的 PROC PROBIT 现归入第四部分的第 19 章)。这四个程序分别简介如下：

■PROC STANDARD 程序

将一组变量逐一标准化，每一个变量可有互异的平均数及标准差。

■PROC RANK 程序

把每一个数值变量的观察体由小到大排列，然后将排列后的结果输出到新的资料文件内。

■PROC SCORE 程序

将资料文件内现有的变量以线性组合的方式串联，使其产生新的变量。此程序通常与 PROCFACTOR 合用。

■MACRO ITEM 子程序

分析选择题的考试结果，这些选择题必须是单选题而无多选题，题解由读者自行输入。分析结果可纳入资料文件以便进一步地分析或核对。

9.2 基本功能介绍

这四个程序将现有资料文件内的数据加以线性或非线性转换，以产生新的变量。这些新变量存在一个新资料文件内，以便 SAS 做进一步的分析处理。

第 10 章 标准化分数：统计程序 PROC STANDARD

10.1 PROC STANDARD 程序概述

PROC STANDARD 这个统计程序旨在将资料文件内的数值变量加以标准化。标准化的公式如下：

$$t = \frac{\text{原始分数} - \text{样本平均数}}{\text{样本的标准差}}$$

经过标准化的变量自动以 0 为平均数，1 为标准差。但亦可采用任何数值作为标准化后变量的平均数和标准差。另外，如果原始分数是常态分配中所取出的随机样本，则经过标准化后的数据会自动成为 t 分配。

10.2 如何撰写 PROC STANDARD 程序

PROC STANDARD 含五道指令，它们的格式如下：

PROC STANDARD	选项串；
VAR	变量名称串；
FREQ	变量名称；
WEIGHT	变量名称；
BY	变量名称串；

指令 #1 PROC STANDARD 选项串：

此指令的选项有六：

(1) DATA=输入资料文件名称

指明 SAS 应对那一个资料文件进行标准化。若省略此选项，则 SAS 会自动找出在程序之前最后形成的 SAS 资料文件，对它的变量加以标准化。

(2) OUT=输出资料文件

变量标准化后会存入一个新的资料文件，选项 OUT= 是用来为此新资料文件命名的。新的资料文件包括原有的资料文件 (即未经标准化的原始数据)，以及经过标准化后的新变量。

(3) VARDEF=DF

VARDEF=WEIGHT (或 WGT)

VARDEF=N

VARDEF=WDF

指定变异数计算过程中分母的值。若选用 `VARDEF=DF`，则分母是自由度；自由度的值是样本数减 1。若选用 `WEIGHT`，则分母是各观察体乘以加权值后的总和。若选用 `N`，则分母是样本数。若选用 `WDF`，则分母是上述 `WEIGHT` 值减 1。此选项的内设值是 `DF`。

(4) `MEAN` (或 `M`)=新平均数

界定标准化后 `VAR` 指令中所有变量或资料文件中所有数值变量(如果读者省略 `VAR` 指令)的平均数值。若省略此选项，则新的平均数等于标准化前的平均数。

(5) `STD` (或 `S`)=新标准差

界定标准化后 `VAR` 指令中所有变量或资料文件中所有数值变量(如果读者省略 `VAR` 指令)的标准差。若省略此选项，则新的标准差等于标准化前的标准差。

(6) `REPLACE`

指示 SAS 用平均数取代所有的遗漏数据。

指令 #2 VAR 变量名称串：

读者可在此指令中列出需要标准化的数值变量。若省略此指令，则资料文件中所有数值变量都会被标准化。

指令 #3 FREQ 变量名称：

在输入资料文件内指明一个变量为次数变量。这个变量的值就是各观察体重复出现的次数。若此变量的值不是一个整数 (如：3.7)，则 SAS 会截去小数部分，只取其整数 (如：3)。

指令 #4 WEIGHT 变量名称：

在输入资料文件内指明一个变量为比重变量，这个变量的值就是各观察体的加权值。这个值不一定要是整数，它是用来计算经过加权后的平均数和变异数。

指令 #5 BY 变量名称串：

这个指令的目的在于将原资料文件分成数个小资料文件，然后在每个小资料文件内进行标准化的变量转换。当读者选用这道指令时，原资料文件的数据必须按照 `BY` 变量串的值由小到大重新排列过，这个步骤可藉 `PROC SORT` 来达成。

10.3 范 例

例一：测验分数的标准化

这个资料文件 (文件名 `A`) 包含学生的学号 (`STUDENT`)、班级代号 (`SECTION`)、及这两班学生在三次考试上的成绩 (`TEST1-TEST3`)。这些成绩经过标准化后都以 80 为平均数，5 为标准差。经过标准化的成绩以 `STEST1-STEST3` 表示，以便和原成绩 `TEST1-TEST3` 区别。输出资料文件被命名为 `NEW`。在标准化时，两班学生的成绩应分

开处理。故须先用 PROC SORT 的方式将资料文件 A 中的学生成绩分类，然后再进行标准化。PROC PRINT 旨在把标准化的结果印出。为了比较标准化前后平均数及标准差之改变，PROC MEANS 再度计算 NEW 资料文件内 TEST1-TEST3 以及 STEST1-STEST3 的平均数与标准差。结果证明标准化以后的平均数与标准差较整齐。

程 序

```
DATA A;
    INPUT STUDENT SECTION TEST1-TEST3;
    STEST1=TEST1;
    STEST2=TEST2;
    STEST3=TEST3;
    CARDS;
238900545 1 94 91 87
254701167 1 95 96 97
238806445 2 91 86 94
999002527 2 80 76 78
263924860 1 92 40 85
459700886 2 75 76 80
416724915 2 66 69 72
999001230 1 82 84 80
242760674 1 75 76 70
990001252 2 51 66 91
;
PROC SORT;
    BY SECTION;
PROC STANDARD MEAN=80 STD=5 OUT=NEW;
    BY SECTION;
    VAR STEST1-STEST3;
PROC PRINT DATA=NEW;
    BY SECTION;
    TITLE 'STANDARDIZED TEST SCORES';
PROC MEANS DATA=NEW(DROP=STUDENT) MAXDEC=2 N MEAN STD;
    BY SECTION;
RUN;
```

结 果

报表 10.1 测验分数的标准化

CONSTRUCTED SCORING EXAMPLE									
SCORED DATA									
SECTION=1					SECTION=2				
NAME	MEAN	STD	N		NAME	MEAN	STD	N	
STEST1	87.6	8.7349871208	5		STEST1	72.6	15.076471736	5	
STEST2	77.4	22.221611103	5		STEST2	74.6	7.7330459717	5	
STEST3	83.8	9.8843310345	5		STEST3	83	9.2195444573	5	
STANDARDIZED TEST SCORES									
SECTION=1									
OBS	STUDENT	TEST1	TEST2	TEST3	STEST1	STEST2	STEST3		
1	238900545	94	91	87	83.6634	83.0601	81.6187		
2	254701167	95	96	97	84.2358	84.1851	86.6772		
3	263924860	92	40	85	82.5186	71.5848	80.6070		
4	999001230	82	84	80	76.7945	81.4850	78.0778		
5	242760674	75	76	70	72.7876	79.6850	73.0193		
STANDARDIZED TEST SCORES									
SECTION=2									
OBS	STUDENT	TEST1	TEST2	TEST3	STEST1	STEST2	STEST3		
6	238806445	91	86	94	86.1022	87.3710	85.9656		
7	999002527	80	76	78	82.4542	80.9052	77.2884		
8	459700886	75	76	80	80.7959	80.9052	78.3730		
9	416724915	66	69	72	77.8112	76.3792	74.0344		
10	990001252	51	66	91	72.8365	74.4394	84.3386		
STANDARDIZED TEST SCORES									
SECTION=1					SECTION=2				
N Obs	Variab le	N	Mean	Std Dev	N Obs	Variable	N	Mean	Std Dev
5	TEST1	5	87.60	8.73	5	TEST1	5	72.60	15.08
	TEST2	5	77.40	22.22		TEST2	5	74.60	7.73
	TEST3	5	83.80	9.88		TEST3	5	83.00	9.22
	STEST1	5	80.00	5.00		STEST1	5	80.00	5.00
	STEST2	5	80.00	5.00		STEST2	5	80.00	5.00
	STEST3	5	80.00	5.00		STEST3	5	80.00	5.00

第 11 章 排名（序）：统计程序 PROC RANK

11.1 PROC RANK 程序概述

PROC RANK 这个统计程序的功能其实很简单：将文件中的数据由小到大重新排列。当遇到完全相等的数据时，这个统计程序通常采用平均名次 (Average Rank) 来处理。排名这一步骤看似简单，但却是所有无参数统计分析的第一步。下面简单地介绍几个排名的应用：

1. 一个文件先用 PROC RANK 处理过，将其数据由小到大排列。然后再利用 PROC ANOVA 或 PROC GLM 对这些名次 (而非原始分数) 作无参数的变异数分析。如：一因子的 Kruskal-Wallis 检定，或二因子的 Friedman 检定等。
2. 将两组数据先用 PROC RANK 转成名次，然后用 PROC TTEST (亦即 t 检定) 比较平均名次的异同。这就是无参数的威尔克孙测试 (Wilcoxon Rank Sum Test)。若 t 检定用在中数的检定上，则所得的就是中数检定 (Median Test)。
3. 无参数的回归分析也是先将数据用 PROC RANK 转换成名次，再以 PROC REG (或 PROC GLM 等其他的回归统计程序) 处理之。
4. 名次也可用来检定某一变量的值所形成的分配；将名次除以样本数或样本数加 1，使其转变成由 0 到 1 的概率值。这些概率值也就是累积概率值，它们的反函数即是变量值。取几个代表性的变量值，如：四分位数或百分位数等。然后用这些代表性的变量值与理论的分配所导出的值比较，以决定样本是否由该理论分配 (如常态分配) 经随机抽样选出的。
5. 将 PROC RANK 与其选项 GROUP= 采用，读者可将一个连续变量的分配等分成不连续，但人数相等的区间。

11.2 如何撰写 PROC RANK 程序

PROC RANK 对输入文件内各数值变量逐一作排名，PROC RANK 含四道指令，它们的格式如下：

PROC RANK	选项串；
VAR	变量名称串；
RANKS	名次的变量名称串；
BY	变量名称串；

指令 #1 PROC RANK 选项串；

与此指令有关的选项有九项：

(1) DATA=输入文件

引导 SAS 对一个文件做排名。若省略此选项，则 SAS 会自动找出在此程序之前最后形成的 SAS 文件，对其变量做排名。

(2) TIES=MEAN 或

TIES=HIGH 或

TIES=LOW

告诉 SAS 如果遇到等值的数据时，究竟应采用平均名次或是高 / 低名次。内设置是平均名次。若读者选 TIES=HIGH，则等值的数据以较高名次代表。若选 TIES=LOW，则等值的数据以较低名次代表。下面仅试举一例来说明这三种不同的处理方式：

重 (磅)	TIES=MEAN	TIES=HIGH	TIES=LOW
107	1	1	1
110	2.5	3	2
110	2.5	3	2
120	4	4	4
125	6	7	5
125	6	7	5
125	6	7	5
136	8	8	8

(3) DESCENDING

规定排名时是按照由大到小的顺序 (一般而言，排名是按着由小到大的顺序)。根据这个选项，最大数值的名次是 1，其次是 2，余此类推。若省略此选项，则排名按照由小到大的顺序。

(4) GROUPS=正整数

代表组别的数目，每组的观察体数目几乎是均等的。最小的数值放在第一组，最大的数值放在最后一组。此选项采用于计算数值的分位数 (如百分位数)。下列是几个常用的 GROUPS 值：

GROUPS=100 将原数据转换成百分位数。

GROUPS=10 将原数据转换成十分位数。

GROUPS=4 将原数据转换成四分位数。

例如：读者欲取得四分位数的排名，则你可在指令中，指明 GROUPS=4，SAS 就会将各观察体等分成四组。这四组的四分位数分别是 0，1，2，3。

一般而言，任何一个数值的分位数的算法如下：

$$\text{FLOOR}[\text{rank} * k / (n+1)]$$

在此，FLOOR 是 SAS 的一个函数，

rank 是该数值的排名，

k 是指令 GROUPS= 的值，

n 是样本的总数，

(5) FRACTION (或 F)

规定名次以分数来表示，这个分数的值就是原名次的值（正整数）除以样本的总数。

(6) PERCENT (或 P)

将上述选项 FRACTION 求得的结果乘以 100。若文件中有等值的数据，此选项假设 TIES=HIGH；除非读者另外选用 TIES=MEAN 或 TIES = LOW。

(7) NORMAL=BLOM 或

NORMAL=TUKEY 或

NORMAL=VW

要求 PROC RANK 由名次中导出常态分配的反函数值（又称常态数 NORMAL SCORE）。经过这个转换的变量会自动形成常态分配。这个选项的三个可能值定义如下页：

BLOM $Y_i = \Psi C(r_i - 3/8) / (n+1/4)$

TUKEY $Y_i = \Psi C(r_i - 1/3) / (n+1/3)$

VW $Y_i = \Psi C(r_i) / (n+1)$

在此， ΨC 是累积常态概率的反函数，

r_i 是名次，

n R_i 是样本总数，

VW 是 van der Waerden，最适用于无参数的标准数分析。

上面三种可能转换中，以 BLOM 最好 (Blom, 1958; Tukey, 1962)。

(8) SAVAGE

要求 PROC RANK 由名次中导出指数 (Exponential) 函数的反函数值。这些数值又称指数值或 Savage 值。它的定义如下：

$$Y_i = \left[\sum_{j=n-r_i+1}^n (1/j) \right] - 1 \quad \text{在此， } r_i \text{ 是名次， } n \text{ 是样本总数。}$$

(9) OUT=输出文件

输出文件包括变量名次，内设值是 OUT=_DATA_。

指令 #2 VAR 变量名称串：

读者可用此指令列举所有需要排名的变量名称，这些变量必须是数值变量。若省略此指令，输入文件内所有数值变量都会自动被排名。

指令 #3 RANKS 名次的变量名称串：

这个指令必须与上述 VAR 指令采用。若读者希望输出文件内同时包含原有的变量及排名后的名次，你可以利用 RANKS 指令为这些名次命名。命名时须按照 VAR 指令中变量名称的次序。

指令 #4 BY 变量名称串:

这道指令的目的在于将原文件分成数个小文件, 然后对每一个小文件内的数据作排名。当读者选用此指令时, 原文件内的数据必须依 BY 变量串的值做从小到大的排列, 这一个步骤可借 PROC SORT 达成。

11.3 范 例**例一: 国民平均所得的排名**

这一个文件 (文件名 A) 内只含两个变量: 地点 (LOCATION) 及国民收入的增加值 (GAIN)。第一次的 PROC RANK 将增值的数据由小到大排名。第二次的 PROC RANK 根据原文件的数据, 分为两个地点, 再对增值作排名。

程 序

```
DATA A;
    INPUT LOCATION GAIN;
    CARDS;
1 7.2
1 7.9
1 7.6
1 6.3
1 8.4
1 8.1
1 8.1
2 7.3
2 7.7
2 7.7
;
PROC RANK;
    VAR GAIN;
    RANKS RANKGAIN;
PROC PRINT;
    TITLE 'RANK THE GAIN VALUES';
PROC RANK DATA=A OUT=B;
    BY LOCATION;
    RANKS RGAIN;
    VAR GAIN;
PROC PRINT;
    BY LOCATION;
```

```
TITLE 'RANKINGS WITHIN LOCATIONS';  
RUN;
```

结 果

报表 11.1 国民平均所得的排名

RANKTHEGAINVALUES			
OBS	LOCATION	GAIN	RANKGAIN
1	1	7.2	2.0
2	1	7.9	7.0
3	1	7.6	4.0
4	1	6.3	1.0
5	1	8.4	10.0
6	1	8.1	8.5
7	1	8.1	8.5
8	2	7.3	3.0
9	2	7.7	5.5
10	2	7.7	5.5

RANKINGSWITHINLOCATIONS

-----LOCATION=1-----			
OBS	GAIN	RGAIN	
1	7.2	2.0	
2	7.9	4.0	
3	7.6	3.0	
4	6.3	1.0	
5	8.4	7.0	
6	8.1	5.5	
7	8.1	5.5	
-----LOCATION=2-----			
OBS	GAIN	RGAIN	
8	7.3	1.0	
9	7.7	2.5	
10	7.7	2.5	

第 12 章 变量值的线性组合：统计程序 PROC SCORE

12.1 PROC SCORE 程序概述

此程序将一系列变量的值乘以适当的比重 (或系数), 然后以线性组合的方式将其总和算出, 由此产生一个新的资料文件。基本上, 这个程序不外乎是将两个可相乘的矩阵相乘, 以其相乘结果建立另一个新的矩阵 (或资料文件)。相乘的两个矩阵之一, 必须是原始数据的资料文件, 另一个矩阵则是系数资料文件。系数多半由其他的统计程序而来, 如 PROC FACTOR。系数资料文件内必须包含两个变量:

- (1) `_TYPE_` 变量,
- (2) `_NAME_` (或 `_MODEL_`) 变量。

`_TYPE_` 变量的值就是系数, 而 `_NAME_` (或 `_MODEL_`) 变量则含 PROC SCORE 所产生的新变量的名字。下面是一个例子: 在因子分析中, PROC FACTOR 的输出资料文件内包含因子分数系数, 这些因子分数系数的 `_TYPE_` 等于 'SCORE'。另外, 这个输出资料文件也含有 `_NAME_` 变量, 这个变量的值, 根据内设值的原理, 就是因子的名字, 如: FACTOR1, FACTOR2 等等。最后, 这个输出资料文件还有另外两个变量: `_TYPE_ = MEAN` 及 `_TYPE_ = STD`。PROC SCORE 在计算线性组合之前, 必须先用这两个变量将原始数据标准化。所以, FACTOR 程序并不直接产生因子分数 (Factor Score)。FACTOR 程序只是将上述必要的数 (如: `_TYPE_ = SCORE`) 输入 PROC SCORE, 再由 PROC SCORE 将这些数据经线性组合转换成因子分数。其他的多变量统计程序, 如: PRINCOMP, CANCORR, CANDISC 及 VARCLUS, 也像上述因子分析程序一般, 只输出系数。这些统计程序并指明线性组合的方法, 以便利 PROC SCORE 的执行。线性组合的结果可以成为主成分值 (Principal Component Score), 或典型变量值 (Canonical Variable Score), 或集群值 (Cluster Score)。

12.2 如何撰写 PROC SCORE 程序

PROC SCORE 对输入资料文件执行变量值的线性组合, 含四道指令, 它们的格式如下:

PROC SCORE	选项串;
VAR	变量名称串;
ID	变量名称串;
BY	变量名称串;

指令 #1 PROC SCORE 选项串:

此指令的选项有六项：

(1) DATA=输入资料文件

这个输入资料文件含原始(未经线性转换的)变量值。读者一定要指明，不可省略此选项。

(2) SCORE=输入资料文件

这个输入资料文件含线性组合所必需的系数。这个资料文件必须含 `_TYPE_` 与 `_NAME_` (或 `_MODEL_`) 两变量。若省略此选项，SAS 会自动找在此程序之前最后形成的 SAS 资料文件，以此为系数资料文件。

(3) OUT=输出资料文件

这个输出资料文件含所有原始变量值 (由 DATA= 而来)，加上线性组合后的新变量值。新变量用 `_NAME_` 或 `_MODEL_` 命名。

(4) TYPE=系数的变量名称

指出在 SCORE = 输入资料文件内，含有系数的变量之名称。内设值是 TYPE=SCORE。这个内设值的目的在于标明只有 `_TYPE_ = 'SCORE'` 的变量才是含有系数的变量。当此选项与因子分析合用时，读者可以省略此选项。当此选项与回归分析合用时，这个选项代表回归分析的方法。一般而言，回归分析方法的 TYPE=OLS。

(5) PREDICT

要求 PROC SCORE 将 -1 的系数转变成 0。在回归分析时，所有因变量的系数都是 -1，故须用此选项。当 -1 改成 0 后，SCORE 程序所产生的线性组合会自动成为因变量的预测值。

(6) NOSTD

抑止原始变量值被标准化；否则，PROC SCORE 会找出原始变量值的平均数 (MEAN) 与标准差 (STD)，先对原始变量值执行标准化，然后以这些标准化后的数值与系数相乘，取得线性组合。

指令 #2 VAR 变量名称串:

读者必须在此指令中列出线性组合所需的所有变量名称。这些变量必须同时被包括在 DATA=和 SCORE= 输入资料文件内。若读者省略此指令，则 SCORE= 资料文件内所有数值变量都会被线性转换。这一点是读者应该特别注意的。

指令 #3 ID 变量名称串:

用来拣选 DATA= 输入资料文件中某些变量，使它们包括在 OUT= 输出资料文件内；可以是文字变量或数值变量。若读者不界定这个指令，则输入资料文件内所有的变量都会被纳入输出资料文件内。

指令 #4 BY 变量名称串：

SCORE 程序依据此指令所列举的变量，将资料文件分成几个小资料文件。然后就每个小资料文件，分别执行分析。选用此指令时，资料文件内的数据必须先按照 BY 变量串的值作由小到大的重新排列，这个步骤可借 PROC SORT 达成。

12.3 范 例

■ 健康变量的三次线性组合

这一个资料文件 (DATA=FITNESS) 包含六个健康变量，次序是：年龄 (AGE)，体重 (WEIGHT)，吸氧的效率 (OXY)，跑步时间 (RUNTIME)，休息时的脉搏 (RSTPULSE)，及运动时的脉搏(RUNPULSE)。这些变量经过三次线性组合的转换。

例一：因子分析后执行线性组合

资料文件 (FITNESS) 输入后，经因子分析，产生因子数系数 (存在 OUTSTAT = FACTOUT 资料文件里)。SCORE 程序使这些因子分数系数与原变量的值相乘，乘积便是因子分数 (Factor Score)。其输出资料文件 (FSCORE) 含原变量及这两个因子分数 (FACTOR1, FACTOR2) 的值。

程 序

```

OPTIONS NODATE;
DATA FITNESS;
    INPUT AGE WEIGHT OXY RUNTIME RSTPULSE RUNPULSE @@;
    CARDS;
44 89.47 44.609 11.37 62 178    51 69.63 40.836 10.95 57 168
40 75.07 45.313 10.07 62 185    51 77.91 46.672 10.00 48 162
44 85.84 54.297 8.65 45 156     48 91.63 46.774 10.25 48 162
42 68.15 59.571 8.17 40 166     49 73.37 50.388 10.08 67 168
38 89.02 49.874 9.22 55 178     57 73.37 39.407 12.63 58 174
47 77.45 44.811 11.63 58 176     54 79.38 46.080 11.17 62 156
40 75.98 45.681 11.95 70 176     56 76.32 45.441 9.63 48 164
43 81.19 49.091 10.85 64 162     50 70.87 54.625 8.92 48 146
44 81.42 39.442 13.08 63 174     51 67.25 45.118 11.08 48 172
38 81.87 60.055 8.63 48 170     54 91.63 39.203 12.88 44 168
44 73.03 50.541 10.13 45 168     51 73.71 45.790 10.47 59 186
45 87.66 37.388 14.03 56 186     57 59.08 50.545 9.93 49 148
45 66.45 44.754 11.12 51 176     49 76.32 48.673 9.40 56 186
47 79.15 47.273 10.60 47 162     48 61.24 47.920 11.50 52 170
54 83.12 51.855 10.33 50 166     52 82.78 47.467 10.50 53 170

```

```

49 81.42 49.156 8.95 44 180
;
PROC FACTOR DATA=FITNESS OUTSTAT=FACTOUT
    METHOD=PRIN ROTATE=VARIMAX SCORE;
    VAR AGE WEIGHT RUNTIME RUNPULSE RSTPULSE ;
    TITLE 'FACTOR SCORING EXAMPLE';
PROC PRINT DATA=FACTOUT;
    TITLE2 'DATA SET FROM PROC FACTOR';
PROC SCORE DATA=FITNESS SCORE=FACTOUT OUT=FSCORE;
    VAR AGE WEIGHT RUNTIME RUNPULSE RSTPULSE;
PROC PRINT DATA=FSCORE;
    TITLE2 'DATA SET FROM PROC SCORE';RUN;

```

结 果

报表 12.1 因子分析后执行线性组合

FACTOR SCORING EXAMPLE									
Initial Factor Method: Principal Components									
Prior Communality Estimates: ONE									
Eigenvalues of the Correlation Matrix: Total = 5 Average = 1									
	1	2	3	4	5				
Eigenvalue	1.884147	1.252009	0.901175	0.595193	0.367476				
Difference	0.632139	0.350834	0.305982	0.227717					
Proportion	0.3768	0.2504	0.1802	0.1190	0.0735				
Cumulative	0.3768	0.6272	0.8075	0.9265	1.0000				
2 factors will be retained by the MINEIGEN criterion.									
Factor Pattern		Variance explained by each factor							
	FACTOR1	FACTOR2		FACTOR1	FACTOR2				
				1.884147	1.252009				
AGE	-0.43171	0.77028							
WEIGHT	0.40922	-0.40313	Final Communality Estimates: Total = 3.136156						
RUNTIME	0.63230	0.62243							
RUNPULSE	0.76818	-0.14712	AGE	WEIGHT	RUNTIME	RUNPULSE	RSTPULSE		
RSTPULSE	0.73513	0.29512	0.779705	0.329975	0.787226	0.611742	0.627508		
FACTOR SCORING EXAMPLE									
Rotation Method: Varimax									
Rotated Factor Pattern			Orthogonal Transformation Matrix						
	FACTOR1	FACTOR2			1	2			
AGE	0.09808	0.87754		1	0.81263	-0.58278			
WEIGHT	0.09761	-0.56608		2	0.58278	0.81263			
RUNTIME	0.87657	0.13731							
RUNPULSE	0.53851	-0.56723	Variance explained by each factor						
RSTPULSE	0.76938	-0.18859							
					FACTOR1	FACTOR2			
					1.669455	1.466700			
Final Communality Estimates: Total = 3.136156									
AGE	WEIGHT	RUNTIME	RUNPULSE	RSTPULSE					
0.779705	0.329975	0.787226	0.611742	0.627508					

Scoring Coefficients Estimated by Regression
Squared Multiple Correlations of the Variables with each Factor

	FACTOR1	FACTOR2
	1.000000	1.000000
Standardized Scoring Coefficients		
	FACTOR1	FACTOR2
AGE	0.17235	0.63349
WEIGHT	-0.01115	-0.38823
RUNTIME	0.56244	0.20842
RUNPULSE	0.26284	-0.33309
RSTPULSE	0.45443	-0.03582

FACTOR SCORING EXAMPLE

DATA SET FROM PROC FACTOR							
OBS	TYPE	NAME	AGE	WEIGHT	RUNTIME	RUNPULSE	RSTPULSE
1	MEAN		47.8065	77.4445	10.5861	169.645	53.4516
2	STD		5.3692	8.3286	1.3874	10.252	7.6194
3	N		31.0000	31.0000	31.0000	31.000	31.0000
4	CORR	AGE	1.0000	-0.2300	0.1661	-0.342	-0.1770
5	CORR	WEIGHT	-0.2300	1.0000	0.1435	0.182	0.0440
6	CORR	RUNTIME	0.1661	0.1435	1.0000	0.314	0.4504
7	CORR	RUNPULSE	-0.3416	0.1815	0.3136	1.000	0.3525
8	CORR	RSTPULSE	-0.1770	0.0440	0.4504	0.352	1.0000
9	COMMUNAL		0.7797	0.3300	0.7872	0.612	0.6275
10	PRIORS		1.0000	1.0000	1.0000	1.000	1.0000
11	EIGENVAL		1.8841	1.2520	0.9012	0.595	0.3675
12	UNROTATE	FACTOR1	-0.4317	0.4092	0.6323	0.768	0.7351
13	UNROTATE	FACTOR2	0.7703	-0.4031	0.6224	-0.147	0.2951
14	TRANSFOR	FACTOR1	0.8126	0.5828	.	.	.
15	TRANSFOR	FACTOR2	-0.5828	0.8126	.	.	.
16	PATTERN	FACTOR1	0.0981	0.0976	0.8766	0.539	0.7694
17	PATTERN	FACTOR2	0.87754	-0.56608	0.13731	-0.56723	-0.1885
18	SCORE	FACTOR1	0.17235	-0.01115	0.56244	0.26284	0.4544
19	SCORE	FACTOR2	0.63349	-0.38823	0.20842	-0.33309	-0.0358

FACTOR SCORING EXAMPLE

DATA SET FROM PROC SCORE								
OBS	AGE	WEIGHT	OXY	RUNTIME	RSTPULSE	RUNPULSE	FACTOR1	FACTOR2
1	44	89.47	44.609	11.37	62	178	0.90352	-1.20356
2	40	75.07	45.313	10.07	62	185	0.44686	-1.42698
3	44	85.84	54.297	8.65	45	156	-1.77220	-0.64824
4	42	68.15	59.571	8.17	40	166	-2.04913	-0.43311
5	38	89.02	49.874	9.22	55	178	-0.57755	-2.18057
6	47	77.45	44.811	11.63	58	176	0.83147	-0.16645
7	40	75.98	45.681	11.95	70	176	1.45415	-0.93218
8	43	81.19	49.091	10.85	64	162	0.38078	-0.50325
9	44	81.42	39.442	13.08	63	174	1.56459	-0.44617
10	38	81.87	60.055	8.63	48	170	-1.42974	-1.64308
11	44	73.03	50.541	10.13	45	168	-0.84743	-0.21866
12	45	87.66	37.388	14.03	56	186	1.86362	-0.83332
13	45	66.45	44.754	11.12	51	176	0.15776	0.06663
14	47	79.15	47.273	10.60	47	162	-0.60333	0.10616
15	54	83.12	51.855	10.33	50	166	-0.21193	0.56238
16	49	81.42	49.156	8.95	44	180	-0.92850	-0.58227
17	51	69.63	40.836	10.95	57	168	0.42993	0.83250
18	51	77.91	46.672	10.00	48	162	-0.65686	0.54107
19	48	91.63	46.774	10.25	48	162	-0.67018	-0.41488
20	49	73.37	50.388	10.08	67	168	0.60445	0.24448
21	57	73.37	39.407	12.63	58	174	1.51204	1.41881
22	54	79.38	46.080	11.17	62	156	0.59292	1.13139
23	56	76.32	45.441	9.63	48	164	-0.59295	1.08456
24	50	70.87	54.625	8.92	48	146	-1.52755	1.10886
25	51	67.25	45.118	11.08	48	172	0.05160	0.87532
26	54	91.63	39.203	12.88	44	168	0.50384	0.51199
27	51	73.71	45.790	10.47	59	186	0.81065	-0.02403
28	57	59.08	50.545	9.93	49	148	-0.76671	2.56639
29	49	76.32	48.673	9.40	56	186	0.13027	-0.52830
30	48	61.24	47.920	11.50	52	170	0.32090	0.91078
31	52	82.78	47.467	10.50	53	170	0.07472	0.22373

例二：回归分析后执行线性组合

资料文件 (FITNESS) 输入后, 经过回归分析, 产生回归系数 (存在 SCORE=REGOUT 资料文件里)。第一个 PROC SCORE 使这些回归系数与原自变量的值相乘, 所产生的乘积是预测值。第二个 PROC SCORE 使回归系数与所有变量 (包括自变量及因变量 "OXY") 的值相乘, 所产生的乘积是负的误差。

程 序

```
PROC REG DATA=FITNESS OUTEST=REGOUT;  
    OXYHAT: MODEL OXY=AGE WEIGHT RUNTIME RUNPULSE RSTPULSE;  
    TITLE 'REGRESSION SCORING EXAMPLE';  
PROC PRINT DATA=REGOUT;  
    TITLE2 'OUTEST=DATA SET FROM PROC REG';  
PROC SCORE DATA=FITNESS SCORE=REGOUT OUT=RSCOREP TYPE=PARMS;  
    VAR AGE WEIGHT RUNTIME RUNPULSE RSTPULSE;  
PROC PRINT DATA=RSCOREP;  
    TITLE2 'PREDICTED SCORES FOR REGRESSION';  
PROC SCORE DATA=FITNESS SCORE=REGOUT OUT=RSCORER TYPE=PARMS;  
    VAR OXY AGE WEIGHT RUNTIME RUNPULSE RSTPULSE;  
PROC PRINT DATA=RSCORER;  
    TITLE2 'RESIDUAL SCORES FOR REGRESSION'; RUN;
```

结 果

报表 12.2 回归分析后执行线性组合

REGRESSION SCORING EXAMPLE					
Model: OXYHAT					
Dependent Variable: OXY					
Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	5	704.52828	140.90566	23.987	0.0001
Error	25	146.85327	5.87413		
C Total	30	851.38154			
Root MSE		2.42366	R-square	0.8275	
Dep Mean		47.37581	Adj R-sq	0.7930	
C.V.		5.11582			
REGRESSION SCORING EXAMPLE					
Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEP	1	117.988513	11.18848531	10.546	0.0001
AGE	1	-0.298255	0.09697869	-3.075	0.0050
WEIGHT	1	-0.053685	0.05600611	-0.959	0.3470
RUNTIME	1	-2.694494	0.39674967	-6.791	0.0001
RUNPULSE	1	-0.129651	0.05074352	-2.555	0.0171
RSTPULSE	1	-0.031385	0.06908315	-0.454	0.6535

REGRESSION SCORING EXAMPLE

OUTEST=DATA SET FROM PROC REG

OBS	MODEL	TYPE	DEPVAR	RMSE	INTERCEP	AGE
1	OXYHAT	PARMS	OXY	2.42366	117.989	-0.29826

OBS	WEIGHT	RUNTIME	RUNPULSE	RSTPULSE	OXY
1	-0.053685	-2.69449	-0.12965	-0.031385	-1

REGRESSION SCORING EXAMPLE

PREDICTED SCORES FOR REGRESSION

OBS	AGE	WEIGHT	OXY	RUNTIME	RSTPULSE	RUNPULSE	OXYHAT
1	44	89.47	44.609	11.37	62	178	44.4019
2	40	75.07	45.313	10.07	62	185	48.9632
3	44	85.84	54.297	8.65	45	156	55.3116
4	42	68.15	59.571	8.17	40	166	57.0116
5	38	89.02	49.874	9.22	55	178	52.2284
6	47	77.45	44.811	11.63	58	176	43.8367
7	40	75.98	45.681	11.95	70	176	44.7645
8	43	81.19	49.091	10.85	64	162	48.5574
9	44	81.42	39.442	13.08	63	174	40.7137
10	38	81.87	60.055	8.63	48	170	55.4589
11	44	73.03	50.541	10.13	45	168	50.4557
12	45	87.66	37.388	14.03	56	186	36.1845
13	45	66.45	44.754	11.12	51	176	46.6176
14	47	79.15	47.273	10.60	47	162	48.6811
15	54	83.12	51.855	10.33	50	166	46.4949
16	49	81.42	49.156	8.95	44	180	50.1691
17	51	69.63	40.836	10.95	57	168	45.9643
18	51	77.91	46.672	10.00	48	162	49.1399
19	48	91.63	46.774	10.25	48	162	48.6245
20	49	73.37	50.388	10.08	67	168	48.3904
21	57	73.37	39.407	12.63	58	174	38.6380
22	54	79.38	46.080	11.17	62	156	45.3522
23	56	76.32	45.441	9.63	48	164	48.4717
24	50	70.87	54.625	8.92	48	146	54.8006
25	51	67.25	45.118	11.08	48	172	45.5057
26	54	91.63	39.203	12.88	44	168	39.0961
27	51	73.71	45.790	10.47	59	186	44.6421
28	57	59.08	50.545	9.93	49	148	50.3337
29	49	76.32	48.673	9.40	56	186	48.0758
30	48	61.24	47.920	11.50	52	170	45.7252
31	52	82.78	47.467	10.50	53	170	46.0389

REGRESSION SCORING EXAMPLE
RESIDUAL SCORES FOR REGRESSION

OBS	AGE	WEIGHT	OXY	RUNTIME	RSTPULSE	RUNPULSE	OXYHAT
1	44	89.47	44.609	11.37	62	178	-0.20713
2	40	75.07	45.313	10.07	62	185	3.65024
3	44	85.84	54.297	8.65	45	156	1.01464
4	42	68.15	59.571	8.17	40	166	-2.55939
5	38	89.02	49.874	9.22	55	178	2.35442
6	47	77.45	44.811	11.63	58	176	-0.97433
7	40	75.98	45.681	11.95	70	176	-0.91648
8	43	81.19	49.091	10.85	64	162	-0.53357
9	44	81.42	39.442	13.08	63	174	1.27167
10	38	81.87	60.055	8.63	48	170	-4.59608
11	44	73.03	50.541	10.13	45	168	-0.08532
12	45	87.66	37.388	14.03	56	186	-1.20347
13	45	66.45	44.754	11.12	51	176	1.86361
14	47	79.15	47.273	10.60	47	162	1.40809
15	54	83.12	51.855	10.33	50	166	-5.36008
16	49	81.42	49.156	8.95	44	180	1.01306
17	51	69.63	40.836	10.95	57	168	5.12832
18	51	77.91	46.672	10.00	48	162	2.46795
19	48	91.63	46.774	10.25	48	162	1.85053
20	49	73.37	50.388	10.08	67	168	-1.99759
21	57	73.37	39.407	12.63	58	174	-0.76904

22	54	79.38	46.080	11.17	62	156	-0.72777
23	56	76.32	45.441	9.63	48	164	3.03069
24	50	70.87	54.625	8.92	48	146	0.17562
25	51	67.25	45.118	11.08	48	172	0.38767
26	54	91.63	39.203	12.88	44	168	-0.10689
27	51	73.71	45.790	10.47	59	186	-1.14785
28	57	59.08	50.545	9.93	49	148	-0.21134
29	49	76.32	48.673	9.40	56	186	-0.59720
30	48	61.24	47.920	11.50	52	170	-2.19485
31	52	82.78	47.467	10.50	53	170	-1.42814

例三：自创系数数据执行线性组合

这一次的线性组合用了三个系数：第一个是年龄减去体重，其值称为 (AGE_WEIGHT)。第二个是运动时的脉搏减去休息时的脉搏，其值称为 (RUNPULSE_RSTPULSE)。第三个是六个变量值的总和，其值称为 (TOTAL)。资料文件 (FITNESS) 输入后，与含这三个系数的资料文件 (文件名 A) 相乘，取得最后一次线性组合的乘积。

程 序

```
DATA A;
  INPUT _TYPE_ $ _NAME_ $
  AGE WEIGHT RUNTIME RUNPULSE RSTPULSE;
  CARDS;
  SCORE AGE_WGT 1 -1 0 0 0
  SCORE RUN_RST 0 0 0 1 -1
  SCORE TOTAL 1 1 1 1 1
;
PROC PRINT DATA=A;
  TITLE 'CONSTRUCTED SCORING EXAMPLE';
  TITLE2 'SCORING COEFFICIENTS';
PROC SCORE DATA=FITNESS SCORE=A OUT=B;
  VAR AGE WEIGHT RUNTIME RUNPULSE RSTPULSE;
PROC PRINT DATA=B;
  TITLE2 'SCORED DATA';
RUN;
```

结 果

报表 12.3 自创系数数据执行线性组合

CONSTRUCTED SCORING EXAMPLE									
SCORING COEFFICIENTS									
OBS	_TYPE_	_NAME_	AGE	WEIGHT	RUNTIME	RUNPULSE	RSTPUL		
1	SCORE	AGE_WGT	1	-1	0	0	0		
2	SCORE	RUN_RST	0	0	0	1	-1		
3	SCORE	TOTAL	1	1	1	1	1		
CONSTRUCTED SCORING EXAMPLE									
SCORED DATA									
OBS	AGE	WEIGHT	OXY	RUNTIME	RSTPULSE	RUNPULSE	AGE_WGT	RUN_RST	TOTAL
1	44	89.47	44.609	11.37	62	178	-45.47	116	384.84

2	40	75.07	45.313	10.07	62	185	-35.07	123	372.14
3	44	85.84	54.297	8.65	45	156	-41.84	111	339.49
4	42	68.15	59.571	8.17	40	166	-26.15	126	324.32
5	38	89.02	49.874	9.22	55	178	-51.02	123	369.24
6	47	77.45	44.811	11.63	58	176	-30.45	118	370.08
7	40	75.98	45.681	11.95	70	176	-35.98	106	373.93
8	43	81.19	49.091	10.85	64	162	-38.19	98	361.04
9	44	81.42	39.442	13.08	63	174	-37.42	111	375.50
10	38	81.87	60.055	8.63	48	170	-43.87	122	346.50
11	44	73.03	50.541	10.13	45	168	-29.03	123	340.16
12	45	87.66	37.388	14.03	56	186	-42.66	130	388.69
13	45	66.45	44.754	11.12	51	176	-21.45	125	349.57
14	47	79.15	47.273	10.60	47	162	-32.15	115	345.75
15	54	83.12	51.855	10.33	50	166	-29.12	116	363.45
16	49	81.42	49.156	8.95	44	180	-32.42	136	363.37
17	51	69.63	40.836	10.95	57	168	-18.63	111	356.58
18	51	77.91	46.672	10.00	48	162	-26.91	114	348.91
19	48	91.63	46.774	10.25	48	162	-43.63	114	359.88
20	49	73.37	50.388	10.08	67	168	-24.37	101	367.45
21	57	73.37	39.407	12.63	58	174	-16.37	116	375.00
22	54	79.38	46.080	11.17	62	156	-25.38	94	362.55
23	56	76.32	45.441	9.63	48	164	-20.32	116	353.95
24	50	70.87	54.625	8.92	48	146	-20.87	98	323.79
25	51	67.25	45.118	11.08	48	172	-16.25	124	349.33
26	54	91.63	39.203	12.88	44	168	-37.63	124	370.51
27	51	73.71	45.790	10.47	59	186	-22.71	127	380.18
28	57	59.08	50.545	9.93	49	148	-2.08	99	323.01
29	49	76.32	48.673	9.40	56	186	-27.32	130	376.72
30	48	61.24	47.920	11.50	52	170	-13.24	118	342.74
31	52	82.78	47.467	10.50	53	170	-30.78	117	368.28

第 13 章 选择题的试题分析：子程序 MACRO ITEM

13.1 MACRO ITEM 子程序概述

自 1991 年 7 月份起，旧版中的统计程序 PROC ITEM 就由子程序 MACRO ITEM 取代。所谓的子程序 (MACRO) 与 Fortran 程序语言中的子程序 (subroutine) 之概念相仿，它由一系列的 SAS 指令组成，贮存在一个单独的文件里。然后在主程序里，读者视需要，在适当的地方，将这个子程序引用进来。所以，执行试题分析时，读者必须采用两个文件：子程序文件 (如光盘上的 ITEM.MAC 文件) 以及试题分析程序文件 (如 13_1.SAS)。

延袭旧版中的 PROC ITEM，子程序 MACRO ITEM 的功能主要在分析选择题的考题结果，这些选择题必须是单选题，不可以是多选题，而且题数在两百题内。题解由读者在试题分析程序内指定，连同各考生在每一试题上作答的答案。根据考生的答案和题解，MACRO ITEM 可算出每一考生的总成绩 (答对一题算一分)、漏答的题数以及笔误的题数。笔误的答案指无效的作答方式。比方说，某一试卷采用 1 2 3 4 5 为其题目的有效答案，但输入文件中出现 A B C D E 的答案，如此就造成笔误。

除各考生的成绩外，MACRO ITEM 还执行如下的分析：

- 全班总成绩的名次分配，平均成绩，及百分位数等；
- 在每一试题上，最优 1/3 与最劣 1/3 的两组学生选择各可能答案的百分比；
- 计算出每一试题与总分之间的点二分关系系数 (Point Biserial Correlation)，以及此关系系数的统计检定结果；
- 子测验与全测验的信度，如 KR20，KR21 等。

此外，MACRO ITEM 可与其他 SAS 程序联用如 PRINT，CORR，SORT，CONTENTS，SUMMARY 等以便打印分析结果或进行更进一步的统计分析。

13.2 如何撰写试题分析程序

本节所示范的是有关试题分析程序的指令。在这个程序中，读者必须同时引进 MACRO ITEM 子程序，因此，下列的程序首先将此子程序从外在文件 ITEM.MAC 呼叫进来。然后，才进行试题的分析。ITEM.MAC 文件附在光盘上，读者不需再加修饰或增减。由于子程序的指令繁多，故本书不将其打印出来。

指令#1 %INCLUDE (文件名)

```
%INCLUDE      'ITEM.MAC'; (主机上) 或
%INCLUDE      'A:ITEM.MAC'; (微电脑上)
%ITEM (选项串);
RUN;
```

上述指令中,指令 #1 %INCLUDE 只需撰写一次,就可执行一次或多次的 %ITEM 指令。若在主机上执行此程序,则必须将子程序文件 "ITEM.MAC" 贮存于主机的帐号下。若在微电脑上执行此程序,则子程序文件可自软式磁盘机 A 或 B 呼叫进来。

指令 #1 %INCLUDE ' 档名' ;

下列的程序中,指令 #1 %INCLUDE 只需选择一次,就可执行一次或多重的 %ITEM 指令。若在主机上执行此程序,则必须将子程序档案 "ITEM.MAC" 另存于主机的帐号下。若在电脑去执行此程序,则子程序档可自磁盘 A 或 B 呼叫进来。

```
%INCLUDE      ' ITEM.MAC' ; (主机上) 或
%INCLUDE      ' A: ITEM.MAC' ; (电脑上)
%ITEM (选项串) ;
```

指令 #2 %ITEM (选项串);

下列的选项列在括号内,次序无关。两两选项间以逗号 (,) 相隔：

(1) DATA=输入文件

指明到底对那一个 SAS 文件执行分析。若省略此选项,则 SAS 会自动找出在此程序之前最后形成的 SAS 文件,对它执行分析。

(2) VAR=变量名称串

指明输入文件中那些变量名称代表参与分析的选择题。这些变量必须按英文字母的顺序排列。SAS 采用每一变量的第一个字母当作题目的识别代号。一个常用的办法是采用一系列的数字,前面附加一个字母,作为变量的名称。比方说, Q1-Q50 即代表试卷上的五十个选择题。当读者省略此指令时,本程序会自动将除了 BY 变量或 ID 变量以外的变量视为试题的识别代号。

(3) ID=变量名称串

这个选项的功用是根据这个 (些) ID 变量,在成绩单上识别各考生。如此, ID 变量的值就代表该考生。若省略此指令,则 SAS 文件内的观察体代号 (以 _N_ 表之) 就自动成为考生的识别代号。若选用此选项,则 ID 变量自动被包括在输出文件 OUT= 及 OUTBIN= 内。

(4) SUBTEST=第一子测验试题 '第一子测验的名称'/

第二子测验试题 '第二子测验的名称'/...

这个选项是用来为各子测验及整体测验命名的,名称不得超过四十个字母而且必须在前后加单引号。这些名称会被纳入输出文件内,成为下一个选项 SUBNAME= 的值 (如果读者决定不界定下一个选项 SUBNAME=)。内设值 _ALL_, 代表整体的测验。下举一例说明这个选项的语法：

```
%ITEM (SUBTEST=Q1-Q25      'Verbal test' /
        Q26-Q50            'Math test' /
        _ALL_              'Total test',
DATA=FRESHMAN) ;
```

上例界定了三次的试题分析：前半段的语文测验 (廿五题), 后半段的数理试题

(廿五题), 以及整体测验 (五十题)。

在同一个 %ITEM 指令括号内, 读者可重覆使用 SUBTEST= 选项。

(5) SUBNAME=子测验名称的统称

上述选项 SUBTEST= 所界定之子测验的统称, 是一个文字变量, 会被纳入输出文件内, 内设变量名称是 _SUBTEST_。

(6) RESPONSE='有效答案'

此选项界定有效答案的形式, 前后必须以单引号括住而且长度不可超过两百个字母或数字, 内设值是

RESPONSE='12345'

(7) KEY='正确答案串' 或

KEY=_FIRST_

这个选项界定所有选择项的题解, 可以采用两种形态:

形态一

KEY='正确答案串'

若采用此形态, 则读者必须按顺序逐一输入每一题的正确答案, 前后以单引号括住。题数与 VAR= 选项的变量个数相吻合, 且不超过两百题。

形态二

KEY=_FIRST_;

表示输入文件内第一个观察体 (或数据卡) 的答案就是题解。若采用此形态, 则第一个观察体将不被包括在各统计值的计算过程内。若同时界定下一个选项 BY, 则这种形态的界定法仍是指第一分组内的第一个观察体是正确答案。

采用此形态的最大方便是题数可破例超过两百题; 因此, 这是本选项的内设值。

(8) BY=变量名称串

此选项的目的在于根据 BY 变量串将原文件分成几个小文件, 然后只针对各个小文件进行试题分析。若读者界定此选项, 则必须同时界定 VAR= 选项。

(9) PROPHECY=理想的信度

这个值是用来推算由 Spearman-Brown 公式导出的理想的试题题数, 内设值等于 .9。一般而言, Spearman-Brown 公式是用来将折半信度 (Split-half reliability) 转换成根据全长测验的信度 (Full-length test reliability)。

(10) UPLO=百分比 (如 .25)

这个选项选出全班学生中最优的 (1/4) 以及最劣的 (1/4) 学生。针对这两群学生, 在各试题上作答的形式, 以便探讨每一题目的鉴别力 (Item discrimination)。内设值是 1/3 或 .334。

(11) OUT=输出文件

此选项界定一个 SAS 输出文件, 内含各考生的识别代号 (由 ID 选项界定)、总分、失误与笔误的题目、空白题, 以及由总分导出的百分比。

(12) OUTBIN=输出文件

此选项界定另一个 SAS 输出文件, 内含各考生的识别代号 (由选项 ID 界定)、及该考生在各题目上作答的对错 (1 表答对, 0 表答错、笔误或遗漏)。试题则

由变量 BIN1, BIN2, ...等代表。

(13) OUTITEM=输出文件

此选项界定一个 SAS 输出文件, 内含试题分析结果, 如试题的难易度, 鉴别力, 信度等。

(14) SCORE=变量名称

此选项定义一个代表学生总分的变量名称, 内设值是 SCORE=SCORE。

(15) MISSING=变量名称

此选项定义一个代表遗漏题数的变量名称, 内设值是 MISSING=MISSING。

(16) INVALID=变量名称

此选项定义一个代表笔误题数的变量名称, 内设值是 INVALID=INVALID。

(17) PERCENT=变量名称

此选项定义一个代表学生答对之百分比的变量名称, 内设值是 PERCENT=PERCENT。

13.3 范 例

例一：33 题选择题的试题分析

本例说明如何用 ITEM 子程序来分析一个含 33 题选择题的测验。

分析的目的是描述受试者与试题的分数分配 (Score Distribution)。受试者的分数分配含个人的成绩、全体的平均数、变异数、频率分配, 以及最高分、最低分等。

试题的分析含信度, 测验的平均差 (Standard Error of Measurement), 试题的难易度以及子测验的分数分配。

程序的指令分八个部分, 它们的功能说明如下:

第一部分 界定输入资料码 (TEST1) 以及变量名称: 第 12 行至 20 行是学生身份证号码 (SSN), 第 21 行至 53 行是 Q1~Q33 题的答案, 每行表示一题。学生分两组: 第一位至第廿一位属 BY=1 这一组, 其余的学生属 BY=2 这一组。学生答案的解释如下: 0 与 5 视为 "1", 1 与 6 视为 "2", 2 与 7 视为 "3", 3 与 8 视为 "4", 4 与 9 视为 "5", 此由 PROC FORMAT 来定义。

第二部分 引进 'ITEM.MAC' 的子程序并对全测验进行试题分析, 题解由第一数据卡提供。

第三部分 再次进行全测验的试题分析, 题解由选项 KEY= 提供, 其中联接符号 (| |) 将全测验分为两个子测验。分析结果不含第一个数据卡, 这是因为 TEST1 后的括号内界定 FIRSTOBS=2, 表示从第二个观察体开始算起。所有分析结果都纳入三个输出文件, 以便执行第四部分的指令。

第四部分 将第三部分产生的两个文件 OUTITEM 与 OUTTEST 打印出来。

第五部分 利用 CORR 统计程序来审查试题分析的结果是否合理。第一个 CORR 程序计算每一题与其余 32 题总分的关系, 以及所有 32 题测验的 Alpha

信度 (应与 KR20 的值相等)。

第二个 CORR 程序检验每一题的平均数、标准差以及该题分数 (0, 1) 与全测验的积差关系。

第六部分 子测验的试题分析, 将第一题至第十题视为拼音测验的结果 (第一子测验)。其余廿三题视为英文文法的测验结果 (第二子测验)。分析结果纳入 OUTSUB 与 OUTBIN 两个文件内, 再经由 PRINT, CORR 程序打印出来。在此, PROC CORR 的分析过程及目的与第五部分完全相同, 故不再赘述。

第七部分 将考生分为两组, 根据 BY= 变量的值分组。针对每一分组的学生重新执行整体测验的试题分析。

第八部分 如第七部分的作法, 将考生分为两组。针对每一分组的学生重新执行子测验的试题分析。

程 序

```
PTIONS LS=120 PS=60 NODATE;
[第一部分]
PROC FORMAT; VALUE $Q
    '0'='1' '1'='2' '2'='3' '3'='4' '4'='5'
    '5'='1' '6'='2' '7'='3' '8'='4' '9'='5';
RUN;
DATA TEST1;
    INPUT SSN $ 12-20 (Q1-Q33) (33*$CHAR1. );
    BY = 1 + (_N_ > 21);
    FORMAT Q1-Q33 $Q.;
CARDS;
101      999999990372715151617250838251535163517182
101      200465598350507250617350638261536171517183
101      233868923373525163817250738063517251538173
101      372527163618252828251516161517352
101      236909800362505173617250718263837161537361
101      235884995360505282717350836051715161538181
101      270606129370835151817153736051835071537171
101      188447596372517162617252738251535151537152
101      054389259372515250817350738351535071538153
101      130463838373825172618250838050818171537183
101      165463286371517253616253838251516253836251
101      2176696113728 5383608353836261737051538153
101      3528351526151508382518151618171 2
101      228761635382825261717272835151525171538351
101      236869018372525062817251725251715250538182
```

```
101      206422209372825263817250838053515170537182
101      081481581363815151717250825251635161517172
101      2365620643726352636181707252525271537363
101      296549834373515050817153738061815273518151
101      234908052372515162817150836280535071517151
101      407681435372815163617150738261815071517151
101      271535281817251 38251515161537161
101      21728907337261"151618 50725281535171507352
101      37252"151617252728151737161807360
101      234171262370735162817152725150737071518373
101      360505062817052838081815251537361
101      059486239372818262617252838051515061517152
101      232721382372718051617253828051735173537083
101      17638728 372835173617270838050516361537152
101      371527162617250838251816371707383
101      194381114372537151617252828251715161537162
101      198424787372835061617272838051738161517162
101      190521297372718162817153718251835171537152
;
TITLE 'ITEM macro: Original test data';
[第二部分]
TITLE2 'Test 1';
%INCLUDE 'ITEM.MAC';
%ITEM(
    DATA=TEST1,
    VAR=Q1-Q33,
    ID=SSN);
[第三部分]
TITLE2 'Test 2';

%ITEM(
    DATA=TEST1 (FIRSTOBS=2) ,
    VAR=Q1-Q33,
    RESPONSE='12345',
    KEY='43332121222331144' ||
        '4312141224123243',
    ID=SSN,
    OUT=OUTTEST,
    OUTITEM=OUTITEM,
```

```

OUTBIN=OUTBIN,
SCORE=RIGHT,
MISSING=BLANK,
INVALID=BAD,
PERCENT=PCNT,
PROPHECY=.75,
UPLO=.27);

```

[第四部分]

```

PROC PRINT DATA=OUTITEM; ID _ITEM_ _NAME_ _RESPON_; RUN;
PROC PRINT DATA=OUTTEST; RUN;

```

[第五部分]

```

PROC CORR DATA=OUTBIN ALPHA NOMISS NOCORR NOSIMPLE; VAR BIN:;RLN;
PROC CORR DATA=OUTBIN NOMISS; VAR BIN:; WITH RIGHT; RUN;
*****;

```

[第六部分]

```

TITLE2 'ITEM macro: Subtests';

```

```

%ITEM(

```

```

    DATA=TEST1,
    VAR=Q1-Q33,
    SUBTEST=_ALL_ 'English Final'/
        Q1-Q10 'Spelling Proficiency'/
        Q11-Q33 'Grammar Proficiency',
    SUBNAME=_SUB_,
    OUT=OUTSUB,
    ID=SSN);

```

```

PROC PRINT DATA=OUTSUB; ID _SUB_ SSN; RUN;

```

```

PROC CORR DATA=OUTBIN ALPHA NOMISS NOCORR NOSIMPLE;
    VAR BIN1-BIN10; RUN;

```

```

PROC CORR DATA=OUTBIN ALPHA NOMISS NOCORR NOSIMPLE;
    VAR BIN11-BIN33; RUN;

```

```

*****;

```

[第七部分]

```

TITLE 'ITEM macro: BY groups';

```

```

TITLE2 'Two BY groups';

```

```

%ITEM(DATA=TEST1,VAR=Q1-Q33,BY=BY,ID=SSN);

```

```

*****;

```

```
[第八部分]
TITLE 'ITEM macro: Subtests and BY groups';
%ITEM(BY=BY,
      DATA=TEST1,
      VAR=Q1-Q33,
      SUBTEST=_ALL_ 'English Final'/
              Q1-Q10 'Spelling Proficiency'/
              Q11-Q33 'Grammar Proficiency',
      ID=SSN);
RUN;
```

结 果

由于报表十分冗长，笔者将它分成八个部分，与程序的分段相对应。每一部分均附有注解。

报表 13.1 33 题选择题的试题分析

[第二部分报表]

[第二部分报表]

ITEM macro: Original test data				
Test 1				
Grade Report				
SSN	Score	#Missing	#Invalid	Percent
200465598	19	0	0	58%
233868923	14	0	0	42%
	20	0	0	61%
236909800	17	0	0	52%
235884995	16	0	0	48%
270606129	17	0	0	52%
188447596	23	0	0	70%
054389259	19	0	0	58%
130463838	18	0	0	55%
165463286	16	0	0	48%
217669611	13	1	0	39%
	22	1	0	67%
228761635	15	0	0	45%
236869018	16	0	0	48%
206422209	21	0	0	64%
081481581	24	0	0	73%
236562064	13	0	0	39%
296549834	16	0	0	48%
234908052	20	0	0	61%
407681435	20	0	0	61%
	19	1	0	58%
217289073	20	1	1	61%
	18	0	1	55%
234171262	12	0	0	36%
	12	0	0	36%
059486239	22	0	0	67%
232721382	23	0	0	70%
17638728	20	0	0	61%
	17	0	0	52%
194381114	23	0	0	70%
198424787	22	0	0	67%
190521297	20	0	0	61%

ITEM macro: Original test data
Test 1

Summary of Test Statistics

Number of Items	33
Number of Subjects	32
Mean Score	18.344
Variance of Scores	11.523
Standard Deviation	3.395
Kuder-Richardson 20	0.433
Kuder-Richardson 21	0.279
Standard Error (from KR20)	2.555
Standard Error (from KR21)	2.883
Minimum Score	12
Maximum Score	24
Total Number of Answers	1056
Number Missing	4
Number Invalid	2

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 769 items

ITEM macro: Original test data
Test 1

Test Frequency Distribution (总成绩的分数分配)

Raw Score	Standard Score	Per-Centile	Percent	Freq	Cum Freq	Each X represents 1 score
24	667	98	3.1%	1	32	X
23	637	92	9.4%	3	31	XXX
22	608	82	9.4%	3	28	XXX
21	578	76	3.1%	1	25	X
20	549	65	18.8%	6	24	XXXXXX
19	519	51	9.4%	3	18	XXX
18	490	43	6.3%	2	15	XX
17	460	35	9.4%	3	13	XXX
16	431	25	12.5%	4	10	XXXX
15	401	17	3.1%	1	6	X
14	372	14	3.1%	1	5	X
13	343	9	6.3%	2	4	XX
12	313	3	6.3%	2	2	XX

ITEM macro: Original test data
Test 1

Item 1: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	3.1%	96.9%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Item-Total:
(点二分关系) Point Bis 0.000 0.000 0.035 -0.035 0.000
(二分关系) Biserial 0.000 0.000 0.087 -0.087 0.000

Item-Remainder:
Point Bis 0.000 0.000 0.087 -0.087 0.000
Biserial 0.000 0.000 0.215 -0.215 0.000
t test 0.000 0.000 0.479 -0.479 0.000
Prob>|t| 1.0000 1.0000 0.6356 0.6356 1.0000

Item 2: *	is keyed	1	2	3*	4	5	Omit	Invalid
Q2	Responses	6.3%	12.5%	78.1%	3.1%	0.0%	0.0%	0.0%
	Upper 33%	12.5%	12.5%	75.0%	0.0%	0.0%	0.0%	0.0%

		Lower 33%	0.0%	20.0%	70.0%	10.0%	0.0%	0.0%	0.0%
	Item-Total:								
	Point Bis	0.167	-0.124	0.077	-0.180	0.000			
	Biserial	0.328	-0.199	0.108	-0.444	0.000			
	Item-Remainder:								
	Point Bis	0.227	-0.035	-0.047	-0.138	0.000			
	Biserial	0.448	-0.057	-0.065	-0.341	0.000			
	t test	1.279	-0.194	-0.256	-0.763	0.000			
	Prob> t	0.2106	0.8474	0.7994	0.4513	1.0000			
Item	3: * is keyed	1	2	3*	4	5	Omit	Invalid	
Q3	Responses	15.6%	9.4%	62.5%	12.5%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	0.0%	87.5%	12.5%	0.0%	0.0%	0.0%	
	Lower 33%	30.0%	10.0%	40.0%	20.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.405	-0.097	0.389	-0.039	0.000			
	Biserial	-0.614	-0.169	0.496	-0.062	0.000			
	Item-Remainder:								
	Point Bis	-0.340	-0.039	0.256	0.033	0.000			
	Biserial	-0.516	-0.068	0.327	0.054	0.000			
	t test	-1.983	-0.213	1.450	0.183	0.000			
	Prob> t	0.0566	0.8325	0.1574	0.8561	1.0000			
Item	4: * is keyed	1	2	3*	4	5	Omit	Invalid	
Q4	Responses	50.0%	6.3%	9.4%	34.4%	0.0%	0.0%	0.0%	
	Upper 33%	25.0%	0.0%	12.5%	62.5%	0.0%	0.0%	0.0%	
	Lower 33%	60.0%	10.0%	10.0%	20.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.159	-0.142	-0.001	0.241	0.000			
	Biserial	-0.199	-0.280	-0.002	0.311	0.000			
	Item-Remainder:								
	Point Bis	-0.130	-0.135	-0.088	0.260	0.000			
	Biserial	-0.163	-0.265	-0.153	0.336	0.000			
	t test	-0.721	-0.745	-0.483	1.474	0.000			
	Prob> t	0.4767	0.4623	0.6324	0.1508	1.0000			
Item	5: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q5	Responses	12.5%	34.4%	25.0%	25.0%	0.0%	3.1%	0.0%	
	Upper 33%	0.0%	50.0%	12.5%	37.5%	0.0%	0.0%	0.0%	
	Lower 33%	20.0%	20.0%	30.0%	20.0%	0.0%	10.0%	0.0%	
	Item-Total:								
	Point Bis	-0.265	0.418	-0.167	0.027	0.000			
	Biserial	-0.426	0.539	-0.228	0.037	0.000			
	Item-Remainder:								
	Point Bis	-0.238	0.290	-0.114	0.091	0.000			
	Biserial	-0.383	0.375	-0.155	0.124	0.000			
	t test	-1.344	1.662	-0.627	0.501	0.000			
	Prob> t	0.1890	0.1069	0.5353	0.6204	1.0000			
Item	6: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q6	Responses	65.6%	0.0%	18.8%	9.4%	0.0%	0.0%	6.3%	
	Upper 33%	50.0%	0.0%	25.0%	25.0%	0.0%	0.0%	0.0%	
	Lower 33%	90.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.378	0.000	0.190	0.320	0.000			
	Biserial	-0.489	0.000	0.276	0.557	0.000			
	Item-Remainder:								
	Point Bis	-0.490	0.000	0.268	0.361	0.000			
	Biserial	-0.633	0.000	0.389	0.628	0.000			
	t test	-3.081	0.000	1.523	2.118	0.000			
	Prob> t	0.0044	1.0000	0.1381	0.0426	1.0000			

Item	7: * is keyed	1	2*	3	4	5	Omit	Invalid
Q7	Responses	15.6%	53.1%	28.1%	3.1%	0.0%	0.0%	0.0%
	Upper 33%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	30.0%	20.0%	40.0%	10.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.070	0.247	-0.106	-0.287	0.000
Biserial	-0.106	0.309	-0.141	-0.710	0.000

Item-Remainder:

Point Bis	-0.002	0.100	-0.007	-0.266	0.000
Biserial	-0.003	0.125	-0.009	-0.657	0.000
t test	-0.009	0.550	-0.037	-1.509	0.000
Prob> t	0.9928	0.5867	0.9711	0.1418	1.0000

Item	8: * is keyed	1*	2	3	4	5	Omit	Invalid
Q8	Responses	34.4%	46.9%	9.4%	9.4%	0.0%	0.0%	0.0%
	Upper 33%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	20.0%	60.0%	0.0%	20.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.300	-0.153	-0.001	-0.226	0.000
Biserial	0.387	-0.192	-0.002	-0.393	0.000

Item-Remainder:

Point Bis	0.163	-0.058	0.033	-0.199	0.000
Biserial	0.210	-0.073	0.058	-0.347	0.000
t test	0.904	-0.319	0.182	-1.113	0.000
Prob> t	0.3730	0.7519	0.8569	0.2746	1.0000

Item	9: * is keyed	1	2*	3	4	5	Omit	Invalid
Q9	Responses	9.4%	28.1%	34.4%	28.1%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	50.0%	37.5%	12.5%	0.0%	0.0%	0.0%
	Lower 33%	10.0%	10.0%	40.0%	40.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.033	0.331	-0.074	-0.231	0.000
Biserial	-0.058	0.441	-0.096	-0.308	0.000

Item-Remainder:

Point Bis	-0.006	0.204	-0.014	-0.185	0.000
Biserial	-0.011	0.271	-0.018	-0.246	0.000
t test	-0.034	1.140	-0.077	-1.030	0.000
Prob> t	0.9730	0.2635	0.9392	0.3113	1.0000

Item	10: * is keyed	1	2*	3	4	5	Omit	Invalid
Q10	Responses	0.0%	56.3%	9.4%	34.4%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	75.0%	12.5%	12.5%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	30.0%	20.0%	50.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.298	-0.001	-0.311	0.000
Biserial	0.000	0.375	-0.002	-0.401	0.000

Item-Remainder:

Point Bis	0.000	0.155	0.055	-0.196	0.000
Biserial	0.000	0.195	0.096	-0.252	0.000
t test	0.000	0.859	0.302	-1.092	0.000
Prob> t	1.0000	0.3973	0.7649	0.2835	1.0000

Item	11: * is keyed	1	2*	3	4	5	Omit	Invalid
Q11	Responses	3.1%	96.9%	0.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	10.0%	90.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.287	0.287	0.000	0.000	0.000
Biserial	-0.710	0.710	0.000	0.000	0.000

Item-Remainder:

		Point Bis	-0.238	0.238	0.000	0.000	0.000		
		Biserial	-0.589	0.589	0.000	0.000	0.000		
		t test	-1.345	1.345	0.000	0.000	0.000		
		Prob> t	0.1888	0.1888	1.0000	1.0000	1.0000		
Item	12: *is keyed	1	2	3*	4	5	Omit	Invalid	
Q12	Responses	3.1%	3.1%	78.1%	15.6%	0.0%	0.0%	0.0%	
	Upper 33%	12.5%	0.0%	87.5%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	10.0%	70.0%	20.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.197	-0.126	0.145	-0.199	0.000			
	Biserial	0.486	-0.311	0.203	-0.301	0.000			
	Item-Remainder:								
	Point Bis	0.241	-0.085	0.021	-0.099	0.000			
	Biserial	0.596	-0.210	0.030	-0.150	0.000			
	t test	1.360	-0.467	0.117	-0.546	0.000			
	Prob> t	0.1839	0.6442	0.9073	0.5890	1.0000			
Item	13: *is keyed	1	2	3*	4	5	Omit	Invalid	
Q13	Responses	3.1%	25.0%	56.3%	12.5%	0.0%	3.1%	0.0%	
	Upper 33%	0.0%	12.5%	87.5%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	10.0%	30.0%	40.0%	20.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.341	-0.146	0.336	-0.180	0.000			
	Biserial	-0.843	-0.199	0.423	-0.290	0.000			
	Item-Remainder:								
	Point Bis	-0.324	-0.051	0.195	-0.121	0.000			
	Biserial	-0.800	-0.069	0.246	-0.195	0.000			
	t test	-1.873	-0.278	1.090	-0.670	0.000			
	Prob> t	0.0708	0.7833	0.2846	0.5078	1.0000			
Item	14: *is keyed	1*	2	3	4	5	Omit	Invalid	
Q14	Responses	87.5%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	
	Upper 33%	87.5%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	80.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.095	0.000	-0.095	0.000	0.000			
	Biserial	0.153	0.000	-0.153	0.000	0.000			
	Item-Remainder:								
	Point Bis	-0.004	0.000	0.004	0.000	0.000			
	Biserial	-0.006	0.000	0.006	0.000	0.000			
	t test	-0.019	0.000	0.019	0.000	0.000			
	Prob> t	0.9846	1.0000	0.9846	1.0000	1.0000			
Item	15: *is keyed	1*	2	3	4	5	Omit	Invalid	
Q15	Responses	46.9%	6.3%	28.1%	18.8%	0.0%	0.0%	0.0%	
	Upper 33%	37.5%	0.0%	50.0%	12.5%	0.0%	0.0%	0.0%	
	Lower 33%	30.0%	10.0%	30.0%	30.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.091	-0.065	0.040	-0.121	0.000			
	Biserial	0.114	-0.128	0.053	-0.176	0.000			
	Item-Remainder:								
	Point Bis	-0.059	-0.029	0.128	-0.054	0.000			
	Biserial	-0.074	-0.057	0.170	-0.078	0.000			
	t test	-0.322	-0.159	0.705	-0.296	0.000			
	Prob> t	0.7496	0.8746	0.4860	0.7689	1.0000			
Item	16: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q16	Responses	0.0%	3.1%	40.6%	53.1%	0.0%	3.1%	0.0%	
	Upper 33%	0.0%	0.0%	12.5%	87.5%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	
	Item-Total:								

		Point Bis	0.000	0.035	-0.256	0.228	0.000		
		Biserial	0.000	0.087	-0.325	0.286	0.000		
		Item-Remainder:							
		Point Bis	0.000	0.065	-0.128	0.080	0.000		
		Biserial	0.000	0.162	-0.162	0.101	0.000		
		t test	0.000	0.359	-0.707	0.441	0.000		
		Prob> t	1.0000	0.7223	0.4853	0.6620	1.0000		
Item	17: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q17		Responses	0.0%	6.3%	28.1%	65.6%	0.0%	0.0%	0.0%
		Upper 33%	0.0%	0.0%	37.5%	62.5%	0.0%	0.0%	0.0%
		Lower 33%	0.0%	0.0%	30.0%	70.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	0.000	0.012	0.081	-0.083	0.000		
		Biserial	0.000	0.024	0.108	-0.107	0.000		
		Item-Remainder:							
		Point Bis	0.000	0.061	0.200	-0.220	0.000		
		Biserial	0.000	0.121	0.266	-0.285	0.000		
		t test	0.000	0.337	1.117	-1.238	0.000		
		Prob> t	1.0000	0.7383	0.2729	0.2253	1.0000		
Item	18: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q18		Responses	18.8%	12.5%	0.0%	68.8%	0.0%	0.0%	0.0%
		Upper 33%	12.5%	0.0%	0.0%	87.5%	0.0%	0.0%	0.0%
		Lower 33%	40.0%	20.0%	0.0%	40.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	-0.241	-0.209	0.000	0.352	0.000		
		Biserial	-0.350	-0.335	0.000	0.461	0.000		
		Item-Remainder:							
		Point Bis	-0.148	-0.136	0.000	0.222	0.000		
		Biserial	-0.215	-0.219	0.000	0.291	0.000		
		t test	-0.821	-0.753	0.000	1.247	0.000		
		Prob> t	0.4182	0.4571	1.0000	0.2220	1.0000		
Item	19: *	is keyed	1	2	3*	4	5	Omit	Invalid
Q19		Responses	34.4%	9.4%	53.1%	3.1%	0.0%	0.0%	0.0%
		Upper 33%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	40.0%	20.0%	40.0%	0.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	-0.015	-0.322	0.190	0.035	0.000		
		Biserial	-0.020	-0.561	0.239	0.087	0.000		
		Item-Remainder:							
		Point Bis	0.101	-0.276	0.042	0.065	0.000		
		Biserial	0.131	-0.480	0.052	0.161	0.000		
		t test	0.559	-1.570	0.229	0.357	0.000		
		Prob> t	0.5806	0.1269	0.8206	0.7239	1.0000		
Item	20: *	is keyed	1*	2	3	4	5	Omit	Invalid
Q20		Responses	71.9%	18.8%	0.0%	9.4%	0.0%	0.0%	0.0%
		Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	60.0%	30.0%	0.0%	10.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	0.293	-0.265	0.000	-0.097	0.000		
		Biserial	0.391	-0.384	0.000	-0.169	0.000		
		Item-Remainder:							
		Point Bis	0.164	-0.167	0.000	-0.029	0.000		
		Biserial	0.218	-0.242	0.000	-0.050	0.000		
		t test	0.909	-0.927	0.000	-0.159	0.000		
		Prob> t	0.3707	0.3612	1.0000	0.8749	1.0000		
Item	21: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q21		Responses	12.5%	75.0%	3.1%	9.4%	0.0%	0.0%	0.0%

		Upper 33%	0.0%	87.5%	0.0%	12.5%	0.0%	0.0%	0.0%
		Lower 33%	10.0%	70.0%	10.0%	10.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	-0.095	0.254	-0.287	-0.097	0.000		
		Biserial	-0.153	0.346	-0.710	-0.169	0.000		
		Item-Remainder:							
		Point Bis	-0.011	0.127	-0.253	-0.026	0.000		
		Biserial	-0.017	0.174	-0.626	-0.045	0.000		
		t test	-0.060	0.703	-1.434	-0.141	0.000		
		Prob> t	0.9529	0.4873	0.1620	0.8889	1.0000		
Item	22: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q22	Responses	43.8%	3.1%	25.0%	28.1%	0.0%	0.0%	0.0%	
	Upper 33%	37.5%	12.5%	37.5%	12.5%	0.0%	0.0%	0.0%	
	Lower 33%	40.0%	0.0%	40.0%	20.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	0.079	0.304	-0.081	-0.127	0.000		
		Biserial	0.099	0.752	-0.110	-0.169	0.000		
		Item-Remainder:							
		Point Bis	-0.070	0.328	-0.005	-0.045	0.000		
		Biserial	-0.088	0.810	-0.007	-0.060	0.000		
		t test	-0.382	1.900	-0.030	-0.246	0.000		
		Prob> t	0.7052	0.0670	0.9766	0.8073	1.0000		
Item	23: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q23	Responses	0.0%	50.0%	6.3%	43.8%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	60.0%	20.0%	20.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	0.000	-0.028	-0.336	0.192	0.000		
		Biserial	0.000	-0.035	-0.661	0.242	0.000		
		Item-Remainder:							
		Point Bis	0.000	0.105	-0.307	0.044	0.000		
		Biserial	0.000	0.131	-0.605	0.056	0.000		
		t test	0.000	0.577	-1.769	0.243	0.000		
		Prob> t	1.0000	0.5684	0.0871	0.8094	1.0000		
Item	24: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q24	Responses	62.5%	15.6%	15.6%	6.3%	0.0%	0.0%	0.0%	
	Upper 33%	87.5%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	
	Lower 33%	60.0%	10.0%	30.0%	0.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	0.273	0.007	-0.456	0.128	0.000		
		Biserial	0.348	0.011	-0.692	0.252	0.000		
		Item-Remainder:							
		Point Bis	0.132	0.090	-0.387	0.182	0.000		
		Biserial	0.168	0.137	-0.587	0.358	0.000		
		t test	0.729	0.497	-2.301	1.012	0.000		
		Prob> t	0.4718	0.6227	0.0285	0.3197	1.0000		
Item	25: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q25	Responses	21.9%	53.1%	18.8%	6.3%	0.0%	0.0%	0.0%	
	Upper 33%	12.5%	87.5%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	20.0%	20.0%	60.0%	0.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	-0.122	0.528	-0.553	0.012	0.000		
		Biserial	-0.171	0.662	-0.801	0.024	0.000		
		Item-Remainder:							
		Point Bis	-0.041	0.407	-0.512	0.057	0.000		
		Biserial	-0.058	0.511	-0.743	0.112	0.000		
		t test	-0.225	2.440	-3.266	0.313	0.000		

		Prob> t	0.8234	0.0208	0.0027	0.7561	1.0000		
Item	26: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q26	Responses	18.8%	34.4%	46.9%	0.0%	0.0%	0.0%	0.0%	
	Upper 33%	12.5%	62.5%	25.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	50.0%	10.0%	40.0%	0.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	-0.385	0.418	-0.097	0.000	0.000			
	Biserial	-0.558	0.539	-0.121	0.000	0.000			
Item-Remainder:									
	Point Bis	-0.353	0.290	0.000	0.000	0.000			
	Biserial	-0.512	0.375	0.000	0.000	0.000			
	t test	-2.069	1.662	0.000	0.000	0.000			
	Prob> t	0.0473	0.1069	1.0000	1.0000	1.0000			
Item	27: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q27	Responses	6.3%	84.4%	0.0%	9.4%	0.0%	0.0%	0.0%	
	Upper 33%	12.5%	75.0%	0.0%	12.5%	0.0%	0.0%	0.0%	
	Lower 33%	10.0%	70.0%	0.0%	20.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	0.012	-0.007	0.000	-0.001	0.000			
	Biserial	0.024	-0.011	0.000	-0.002	0.000			
Item-Remainder:									
	Point Bis	0.019	0.058	0.000	-0.088	0.000			
	Biserial	0.038	0.088	0.000	-0.153	0.000			
	t test	0.105	0.317	0.000	-0.483	0.000			
	Prob> t	0.9167	0.7536	1.0000	0.6324	1.0000			
Item	28: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q28	Responses	87.5%	0.0%	3.1%	9.4%	0.0%	0.0%	0.0%	
	Upper 33%	87.5%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	
	Lower 33%	90.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	0.011	0.000	-0.072	0.031	0.000			
	Biserial	0.017	0.000	-0.179	0.054	0.000			
Item-Remainder:									
	Point Bis	-0.088	0.000	-0.025	0.115	0.000			
	Biserial	-0.141	0.000	-0.062	0.200	0.000			
	t test	-0.484	0.000	-0.138	0.633	0.000			
	Prob> t	0.6318	1.0000	0.8915	0.5313	1.0000			
Item	29: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q29	Responses	9.4%	31.3%	0.0%	59.4%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	20.0%	0.0%	80.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	-0.001	0.274	0.000	-0.258	0.000			
	Biserial	-0.002	0.358	0.000	-0.326	0.000			
Item-Remainder:									
	Point Bis	0.030	0.139	0.000	-0.149	0.000			
	Biserial	0.052	0.182	0.000	-0.189	0.000			
	t test	0.164	0.768	0.000	-0.825	0.000			
	Prob> t	0.8708	0.4482	1.0000	0.4160	1.0000			
Item	30: * is keyed	1	2	3*	4	5	Omit	Invalid	
Q30	Responses	0.0%	3.1%	71.9%	25.0%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	10.0%	20.0%	70.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	0.000	-0.126	0.584	-0.556	0.000			
	Biserial	0.000	-0.311	0.779	-0.758	0.000			

Item-Remainder:								
Point Bis		0.000	-0.094	0.485	-0.466	0.000		
Biserial		0.000	-0.233	0.646	-0.634	0.000		
t test		0.000	-0.518	3.037	-2.882	0.000		
Prob> t		1.0000	0.6083	0.0049	0.0072	1.0000		
Item	31: * is keyed	1	2*	3	4	5	Omit	Invalid
Q31	Responses	3.1%	65.6%	3.1%	28.1%	0.0%	0.0%	0.0%
	Upper 33%	12.5%	87.5%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	50.0%	10.0%	40.0%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		0.250	0.370	-0.126	-0.439	0.000		
Biserial		0.619	0.477	-0.311	-0.585	0.000		
Item-Remainder:								
Point Bis		0.299	0.238	-0.095	-0.330	0.000		
Biserial		0.738	0.307	-0.234	-0.440	0.000		
t test		1.713	1.342	-0.522	-1.917	0.000		
Prob> t		0.0970	0.1896	0.6057	0.0649	1.0000		
Item	32: * is keyed	1	2	3	4*	5	Omit	Invalid
Q32	Responses	40.6%	21.9%	12.5%	21.9%	0.0%	3.1%	0.0%
	Upper 33%	25.0%	25.0%	12.5%	25.0%	0.0%	12.5%	0.0%
	Lower 33%	40.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		0.105	-0.100	-0.180	0.036	0.000		
Biserial		0.133	-0.140	-0.290	0.051	0.000		
Item-Remainder:								
Point Bis		0.159	-0.065	-0.155	-0.087	0.000		
Biserial		0.201	-0.091	-0.249	-0.122	0.000		
t test		0.882	-0.356	-0.860	-0.481	0.000		
Prob> t		0.3848	0.7244	0.3968	0.6343	1.0000		
Item	33: * is keyed	1	2	3*	4	5	Omit	Invalid
Q33	Responses	3.1%	31.3%	37.5%	28.1%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	87.5%	12.5%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	50.0%	10.0%	40.0%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		-0.018	-0.312	0.635	-0.356	0.000		
Biserial		-0.046	-0.408	0.811	-0.474	0.000		
Item-Remainder:								
Point Bis		0.002	-0.258	0.536	-0.312	0.000		
Biserial		0.005	-0.338	0.684	-0.416	0.000		
t test		0.010	-1.461	3.476	-1.798	0.000		
Prob> t		0.9920	0.1543	0.0016	0.0822	1.0000		

[第叁部分报表]

ITEM macro: Original test data
Test 2

Grade Report

SSN	Score	#Missing	#Invalid	Percent
200465598	19	0	0	58%
233868923	14	0	0	42%
	20	0	0	61%
236909800	17	0	0	52%
235884995	16	0	0	48%
270606129	17	0	0	52%
188447596	23	0	0	70%
054389259	19	0	0	58%
130463838	18	0	0	55%
165463286	16	0	0	48%
217669611	13	1	0	39%
	22	1	0	67%

228761635	15	0	0	45%
236869018	16	0	0	48%
206422209	21	0	0	64%
081481581	24	0	0	73%
236562064	13	0	0	39%
296549834	16	0	0	48%
234908052	20	0	0	61%
407681435	20	0	0	61%
	19	1	0	58%
217289073	20	1	1	61%
	18	0	1	55%
234171262	12	0	0	36%
	12	0	0	36%
059486239	22	0	0	67%
232721382	23	0	0	70%
17638728	20	0	0	61%
	17	0	0	52%
194381114	23	0	0	70%
198424787	22	0	0	67%
190521297	20	0	0	61%

ITEM macro: Original test data
Test 2

Summary of Test Statistics(与第二部分结果相同)

Number of Items	33
Number of Subjects	32
Mean Score	18.344
Variance of Scores	11.523
Standard Deviation	3.395
Kuder-Richardson 20	0.433
Kuder-Richardson 21	0.279
Standard Error (from KR20)	2.555
Standard Error (from KR21)	2.883
Minimum Score	12
Maximum Score	24
Total Number of Answers	1056
Number Missing	4
Number Invalid	2

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.75
the test should contain 257 items

ITEM macro: Original test data
Test 2

Test Frequency Distribution(与第二部分结果相同)

Raw Score	Standard Score	Per-Centile	Percent	Freq	Cum Freq	Each X represents 1 score
24	667	98	3.1%	1	32	X
23	637	92	9.4%	3	31	XXX
22	608	82	9.4%	3	28	XXX
21	578	76	3.1%	1	25	X
20	549	65	18.8%	6	24	XXXXXX
19	519	51	9.4%	3	18	XXX
18	490	43	6.3%	2	15	XX
17	460	35	9.4%	3	13	XXX
16	431	25	12.5%	4	10	XXXX
15	401	17	3.1%	1	6	X
14	372	14	3.1%	1	5	X
13	343	9	6.3%	2	4	XX
12	313	3	6.3%	2	2	XX

ITEM macro: Original test data

Test 2 (与第二部分结果相同)

Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	3.1%	96.9%	0.0%	0.0%	0.0%
	Upper 27%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 27%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	0.035	-0.035	0.000
Biserial	0.000	0.000	0.087	-0.087	0.000

Item-Remainder:

Point Bis	0.000	0.000	0.087	-0.087	0.000
Biserial	0.000	0.000	0.215	-0.215	0.000
t test	0.000	0.000	0.479	-0.479	0.000
Prob> t	1.0000	1.0000	0.6356	0.6356	1.0000

(其余 32 题的分析结果省略)

(第四部分报表)

ITEM macro: Original test data

Test 2

ITEM	NAME	RESPON	KEYED	PROPOR	UPPER	LOWER	IT_PB	IT_BIS	IR_PB	IR_BIS	T_TEST	PROB_T
(5 种答案) (题解)												
1	Q1	1		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
1	Q1	2		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
1	Q1	3		0.03125	0.000	0.00000	0.03528	0.08721	0.08708	0.21526	0.47875	0.63559
1	Q1	4	*	0.96875	1.000	1.00000	-0.03528	-0.08721	-0.08708	-0.21526	-0.47875	0.63559
1	Q1	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
2	Q2	1		0.06250	0.125	0.00000	0.16663	0.32797	0.22744	0.44765	1.27924	0.21062
2	Q2	2		0.12500	0.125	0.16667	-0.12373	-0.19878	-0.03542	-0.05690	-0.19412	0.84739
2	Q2	3	*	0.78125	0.750	0.66667	0.07707	0.10795	-0.04675	-0.06549	-0.25635	0.79943
2	Q2	4		0.03125	0.000	0.16667	-0.17975	-0.44436	-0.13801	-0.34118	-0.76321	0.45130
2	Q2	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
3	Q3	1		0.15625	0.000	0.33333	-0.40491	-0.61372	-0.34039	-0.51593	-1.98280	0.05661
3	Q3	2		0.09375	0.000	0.00000	-0.09727	-0.16939	-0.03893	-0.06780	-0.21339	0.83247
3	Q3	3	*	0.62500	0.875	0.50000	0.38881	0.49640	0.25593	0.32674	1.45006	0.15742
3	Q3	4		0.12500	0.125	0.16667	-0.03889	-0.06247	0.03338	0.05363	0.18295	0.85607
3	Q3	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
4	Q4	1		0.50000	0.250	0.33333	-0.15900	-0.19928	-0.13044	-0.16348	-0.72059	0.47674
4	Q4	2		0.06250	0.000	0.16667	-0.14248	-0.28044	-0.13472	-0.26515	-0.74465	0.46228
4	Q4	3	*	0.09375	0.125	0.16667	-0.00100	-0.00175	-0.08790	-0.15308	-0.48333	0.63237
4	Q4	4		0.34375	0.625	0.33333	0.24062	0.31061	0.25992	0.33552	1.47429	0.15082
4	Q4	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
5	Q5	1		0.12500	0.000	0.16667	-0.26514	-0.42596	-0.23830	-0.38285	-1.34395	0.18904
5	Q5	2	*	0.34375	0.500	0.00000	0.41785	0.53939	0.29038	0.37484	1.66210	0.10691
5	Q5	3		0.25000	0.125	0.33333	-0.16740	-0.22811	-0.11375	-0.15500	-0.62713	0.53532
5	Q5	4		0.25000	0.375	0.33333	0.02700	0.03679	0.09100	0.12400	0.50052	0.62036
5	Q5	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
6	Q6	1	*	0.65625	0.500	1.00000	-0.37847	-0.48855	-0.49023	-0.63283	-3.08072	0.00439
6	Q6	2		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
6	Q6	3		0.18750	0.250	0.00000	0.19021	0.27582	0.26795	0.38857	1.52335	0.13814
6	Q6	4		0.09375	0.250	0.00000	0.31988	0.55707	0.36070	0.62815	2.11822	0.04255
6	Q6	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
7	Q7	1		0.15625	0.250	0.16667	-0.07003	-0.10615	-0.00165	-0.00251	-0.00905	0.99284
7	Q7	2	*	0.53125	0.500	0.33333	0.24659	0.30940	0.09983	0.12525	0.54951	0.58672
7	Q7	3		0.28125	0.250	0.33333	-0.10596	-0.14123	-0.00667	-0.00890	-0.03656	0.97108
7	Q7	4		0.03125	0.000	0.16667	-0.28726	-0.71014	-0.26561	-0.65662	-1.50901	0.14176
7	Q7	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
8	Q8	1	*	0.34375	0.500	0.00000	0.29970	0.38687	0.16292	0.21031	0.90446	0.37296
8	Q8	2		0.46875	0.500	0.83333	-0.15287	-0.19181	-0.05815	-0.07296	-0.31904	0.75190
8	Q8	3		0.09375	0.000	0.00000	-0.00100	-0.00175	0.03319	0.05779	0.18186	0.85691
8	Q8	4		0.09375	0.000	0.16667	-0.22562	-0.39291	-0.19911	-0.34675	-1.11285	0.27461
8	Q8	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
9	Q9	1		0.09375	0.000	0.00000	-0.03309	-0.05763	-0.00624	-0.01087	-0.03419	0.97295
9	Q9	2	*	0.28125	0.500	0.16667	0.33090	0.44101	0.20369	0.27147	1.13952	0.26350
9	Q9	3		0.34375	0.375	0.33333	-0.07446	-0.09612	-0.01405	-0.01813	-0.07694	0.93918
9	Q9	4		0.28125	0.125	0.50000	-0.23078	-0.30758	-0.18480	-0.24630	-1.02993	0.31127
9	Q9	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
10	Q10	1		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000	
10	Q10	2	*	0.56250	0.750	0.33333	0.29813	0.37534	0.15489	0.19500	0.85875	0.39729
10	Q10	3		0.09375	0.125	0.16667	-0.00100	-0.00175	0.05501	0.09579	0.30174	0.76493

10	Q10	4		0.34375	0.125	0.50000	-0.31077	-0.40117	-0.19554	-0.25241	-1.09208	0.28349
10	Q10	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
11	Q11	1		0.03125	0.000	0.16667	-0.28726	-0.71014	-0.23845	-0.58948	-1.34483	0.18876
11	Q11	2	*	0.96875	1.000	0.83333	0.28726	0.71014	0.23845	0.58948	1.34483	0.18876
11	Q11	3		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
11	Q11	4		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
11	Q11	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
12	Q12	1		0.03125	0.125	0.00000	0.19655	0.48589	0.24103	0.59586	1.36030	0.18387
12	Q12	2		0.03125	0.000	0.00000	-0.12599	-0.31147	-0.08487	-0.20981	-0.46654	0.64420
12	Q12	3	*	0.78125	0.875	0.66667	0.14494	0.20303	0.02143	0.03002	0.11742	0.90731
12	Q12	4		0.15625	0.000	0.33333	-0.19883	-0.30137	-0.09923	-0.15041	-0.54622	0.58895
12	Q12	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
13	Q13	1		0.03125	0.000	0.16667	-0.34101	-0.84303	-0.32360	-0.79998	-1.87322	0.07081
13	Q13	2		0.25000	0.125	0.33333	-0.14580	-0.19867	-0.05061	-0.06896	-0.27753	0.78327
13	Q13	3	*	0.56250	0.875	0.33333	0.33584	0.42281	0.19509	0.24562	1.08951	0.28460
13	Q13	4		0.12500	0.000	0.16667	-0.18029	-0.28965	-0.12147	-0.19516	-0.67030	0.50779
13	Q1	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
14	Q14	1	*	0.87500	0.875	0.66667	0.09545	0.15335	-0.00355	-0.00571	-0.01945	0.98461
14	Q14	2		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
14	Q14	3		0.12500	0.125	0.33333	-0.09545	-0.15335	0.00355	0.00571	0.01945	0.98461
14	Q14	4		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
14	Q14	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
15	Q15	1	*	0.46875	0.375	0.33333	0.09079	0.11391	-0.05871	-0.07367	-0.32214	0.74958
15	Q15	2		0.06250	0.000	0.00000	-0.06520	-0.12834	-0.02905	-0.05718	-0.15918	0.87459
15	Q15	3		0.28125	0.500	0.50000	0.03966	0.05285	0.12773	0.17023	0.70536	0.48603
15	Q15	4		0.18750	0.125	0.16667	-0.12131	-0.17592	-0.05405	-0.07838	-0.29646	0.76892
15	Q15	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
16	Q16	1		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
16	Q16	2		0.03125	0.000	0.00000	0.03528	0.08721	0.06535	0.16155	0.35869	0.72234
16	Q16	3		0.40625	0.125	0.50000	-0.25650	-0.32478	-0.12794	-0.16200	-0.70655	0.48530
16	Q16	4	*	0.53125	0.875	0.50000	0.22784	0.28588	0.08035	0.10081	0.44150	0.66202
16	Q16	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
17	Q17	1		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
17	Q17	2		0.06250	0.000	0.00000	0.01207	0.02377	0.06146	0.12096	0.33725	0.73828
17	Q17	3		0.28125	0.375	0.33333	0.08126	0.10830	0.19980	0.26628	1.11685	0.27292
17	Q17	4	*	0.65625	0.625	0.66667	-0.08308	-0.10724	-0.22045	-0.28458	-1.23793	0.22534
17	Q17	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
18	Q18	1		0.18750	0.125	0.50000	-0.24113	-0.34967	-0.14821	-0.21492	-0.82084	0.41821
18	Q18	2		0.12500	0.000	0.16667	-0.20857	-0.33509	-0.13625	-0.21890	-0.75329	0.45714
18	Q18	3		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
18	Q18	4	*	0.68750	0.875	0.33333	0.35187	0.46069	0.22202	0.29068	1.24717	0.22198
18	Q18	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
19	Q19	1		0.34375	0.500	0.33333	-0.01538	-0.01986	0.10146	0.13097	0.55861	0.58057
19	Q19	2		0.09375	0.000	0.33333	-0.32189	-0.56056	-0.27555	-0.47986	-1.57002	0.12690
19	Q19	3	*	0.53125	0.500	0.33333	0.19036	0.23885	0.04173	0.05236	0.22875	0.82062
19	Q19	4		0.03125	0.000	0.00000	0.03528	0.08721	0.06497	0.16061	0.35660	0.72389
19	Q19	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
20	Q20	1	*	0.71875	1.000	0.50000	0.29319	0.39075	0.16368	0.21814	0.90874	0.37073
20	Q20	2		0.18750	0.000	0.33333	-0.26509	-0.38442	-0.16691	-0.24203	-0.92718	0.36123
20	Q20	3		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
20	Q20	4		0.09375	0.000	0.16667	-0.09727	-0.16939	-0.02897	-0.05045	-0.15875	0.87493
20	Q20	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
21	Q21	1		0.12500	0.000	0.16667	-0.09545	-0.15335	-0.01088	-0.01747	-0.05957	0.95289
21	Q21	2	*	0.75000	0.875	0.50000	0.25380	0.34584	0.12736	0.17354	0.70331	0.48729
21	Q21	3		0.03125	0.000	0.16667	-0.28726	-0.71014	-0.25322	-0.62600	-1.43368	0.16200
21	Q21	4		0.09375	0.125	0.16667	-0.09727	-0.16939	-0.02571	-0.04477	-0.14085	0.88893
21	Q21	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
22	Q22	1	*	0.43750	0.375	0.50000	0.07895	0.09940	-0.06957	-0.08759	-0.38200	0.70516
22	Q22	2		0.03125	0.125	0.00000	0.30406	0.75167	0.32781	0.81038	1.90047	0.06702
22	Q22	3		0.25000	0.375	0.33333	-0.08100	-0.11037	-0.00540	-0.00736	-0.02960	0.97658
22	Q22	4		0.28125	0.125	0.16667	-0.12677	-0.16895	-0.04489	-0.05982	-0.24611	0.80728
22	Q22	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
23	Q23	1		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
23	Q23	2		0.50000	0.500	0.33333	-0.02806	-0.03517	0.10473	0.13126	0.57682	0.56836
23	Q23	3		0.06250	0.000	0.33333	-0.33568	-0.66070	-0.30730	-0.60483	-1.76871	0.08711
23	Q23	4	*	0.43750	0.500	0.33333	0.19208	0.24182	0.04438	0.05588	0.24334	0.80940
23	Q23	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
24	Q24	1	*	0.62500	0.875	0.50000	0.27289	0.34840	0.13188	0.16837	0.72871	0.47183
24	Q24	2		0.15625	0.000	0.00000	0.00724	0.01098	0.09041	0.13703	0.49723	0.62265
24	Q24	3		0.15625	0.000	0.50000	-0.45643	-0.69181	-0.38735	-0.58711	-2.30125	0.02850
24	Q24	4		0.06250	0.125	0.00000	0.12799	0.25192	0.18165	0.35753	1.01176	0.31975
24	Q24	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
25	Q25	1		0.21875	0.125	0.33333	-0.12232	-0.17134	-0.04106	-0.05751	-0.22508	0.82344
25	Q25	2	*	0.53125	0.875	0.16667	0.52773	0.66215	0.40691	0.51055	2.43985	0.02082
25	Q25	3		0.18750	0.000	0.50000	-0.55265	-0.80141	-0.51219	-0.74273	-3.26633	0.00273

25	Q25	4		0.06250	0.000	0.00000	0.01207	0.02377	0.05714	0.11246	0.31346	0.75610
25	Q25	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
26	Q26	1		0.18750	0.125	0.50000	-0.38491	-0.55816	-0.35336	-0.51241	-2.06888	0.04727
26	Q26	2	*	0.34375	0.625	0.00000	0.41785	0.53939	0.29038	0.37484	1.66210	0.10691
26	Q26	3		0.46875	0.250	0.50000	-0.09664	-0.12126	0.00000	0.00000	0.00000	1.00000
26	Q26	4		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
26	Q26	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
27	Q27	1		0.06250	0.125	0.00000	0.01207	0.02377	0.01925	0.03788	0.10543	0.91674
27	Q27	2		0.84375	0.750	1.00000	-0.00724	-0.01098	0.05774	0.08751	0.31676	0.75362
27	Q27	3		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
27	Q27	4	*	0.09375	0.125	0.00000	-0.00100	-0.00175	-0.08790	-0.15308	-0.48333	0.63237
27	Q27	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
28	Q28	1	*	0.87500	0.875	1.00000	0.01061	0.01704	-0.08804	-0.14144	-0.48410	0.63183
28	Q28	2		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
28	Q28	3		0.03125	0.000	0.00000	-0.07223	-0.17857	-0.02510	-0.06205	-0.13753	0.89153
28	Q28	4		0.09375	0.125	0.00000	0.03109	0.05413	0.11488	0.20005	0.63340	0.53127
28	Q28	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
29	Q29	1		0.09375	0.000	0.00000	-0.00100	-0.00175	0.02994	0.05214	0.16407	0.87078
29	Q29	2	*	0.31250	0.500	0.16667	0.27368	0.35831	0.13894	0.18191	0.76847	0.44822
29	Q29	3		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
29	Q29	4		0.59375	0.500	0.83333	-0.25769	-0.32629	-0.14890	-0.18854	-0.82474	0.41603
29	Q29	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
30	Q30	1		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
30	Q30	2		0.03125	0.000	0.00000	-0.12599	-0.31147	-0.09415	-0.23275	-0.51799	0.60827
30	Q30	3	*	0.71875	1.000	0.33333	0.58443	0.77891	0.48487	0.64622	3.03655	0.00492
30	Q30	4		0.25000	0.000	0.66667	-0.55620	-0.75790	-0.46562	-0.63447	-2.88175	0.00724
30	Q30	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
31	Q31	1		0.03125	0.125	0.00000	0.25030	0.61878	0.29854	0.73803	1.71330	0.09697
31	Q31	2	*	0.65625	0.875	0.33333	0.36985	0.47743	0.23803	0.30726	1.34232	0.18956
31	Q31	3		0.03125	0.000	0.00000	-0.12599	-0.31147	-0.09483	-0.23443	-0.52176	0.60567
31	Q31	4		0.28125	0.000	0.66667	-0.43881	-0.58483	-0.33028	-0.44019	-1.91658	0.06486
31	Q31	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
32	Q32	1		0.40625	0.250	0.33333	0.10534	0.13338	0.15899	0.20131	0.88203	0.38478
32	Q32	2		0.21875	0.250	0.33333	-0.09969	-0.13964	-0.06484	-0.09083	-0.35589	0.72441
32	Q32	3		0.12500	0.125	0.33333	-0.18029	-0.28965	-0.15505	-0.24910	-0.85965	0.39680
32	Q32	4	*	0.21875	0.250	0.00000	0.03606	0.05051	-0.08739	-0.12242	-0.48051	0.63435
32	Q32	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000
33	Q3z	1		0.03125	0.000	0.00000	-0.01848	-0.04568	0.00184	0.00454	0.01006	0.99204
33	Q33	2		0.31250	0.000	0.33333	-0.31151	-0.40785	-0.25779	-0.33752	-1.46139	0.15430
33	Q33	3	*	0.37500	0.875	0.00000	0.63514	0.81089	0.53587	0.68416	3.47638	0.00157
33	Q33	4		0.28125	0.125	0.66667	-0.35560	-0.47393	-0.31195	-0.41576	-1.79839	0.08219
33	Q33	5		0.00000	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	1.00000

ITEM macro: Original test data
Test 2

OBS	SSN	RIGHT (遗漏)	BLANK (笔误)	BAD	PCNT
1	200465598	19	0	0	57.5758
2	233868923	14	0	0	42.4242
3		20	0	0	60.6061
4	236909800	17	0	0	51.5152
5	235884995	16	0	0	48.4848
6	270606129	17	0	0	51.5152
7	188447596	23	0	0	69.6970
8	054389259	19	0	0	57.5758
9	130463838	18	0	0	54.5455
10	165463286	16	0	0	48.4848
11	217669611	13	1	0	39.3939
12		22	1	0	66.6667
13	228761635	15	0	0	45.4545
14	236869018	16	0	0	48.4848
15	206422209	21	0	0	63.6364
16	081481581	24	0	0	72.7273
17	236562064	13	0	0	39.3939
18	296549834	16	0	0	48.4848
19	234908052	20	0	0	60.6061
20	407681435	20	0	0	60.6061
21		19	1	0	57.5758
22	217289073	20	1	1	60.6061
23		18	0	1	54.5455
24	234171262	12	0	0	36.3636
25		12	0	0	36.3636
26	059486239	22	0	0	66.6667
27	232721382	23	0	0	69.6970
28	17638728	20	0	0	60.6061
29		17	0	0	51.5152
30	194381114	23	0	0	69.6970
31	198424787	22	0	0	66.6667
32	190521297	20	0	0	60.6061

[第五部分报表]

ITEM macro: Original test data
Test 2

Correlation Analysis

33 'VAR' Variables:BIN1 BIN2 BIN3 BIN4 BIN5 BIN6 BIN7 BIN8 BIN9 BIN10
BIN11 BIN12 BIN13 BIN14 BIN15 BIN16 BIN17 BIN18 BIN19 BIN20
BIN21 BIN22 BIN23 BIN24 BIN25 BIN26 BIN27 BIN28 BIN29 BIN30
BIN31 BIN32 BIN33

ITEM macro: Original test data
Test 2

Correlation Analysis

Cronbach Coefficient Alpha

for RAW variables : 0.433394
for STANDARDIZED variables: 0.399699

Raw Variables			Std. Variables	
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
BIN1	-0.087076	0.440397	-0.094421	0.423666
BIN2	-0.046752	0.447421	-0.042810	0.414966
BIN3	0.255926	0.397275	0.225607	0.367680
BIN4	-0.087902	0.446237	-0.038595	0.414250
BIN5	0.290382	0.391505	0.357622	0.343129
BIN6	-0.490235	0.520133	-0.513794	0.489898
BIN7	0.099826	0.425697	0.109064	0.388637
BIN8	0.162924	0.414526	0.204955	0.371442
BIN9	0.203685	0.408238	0.179075	0.376127
BIN10	0.154893	0.415573	0.117853	0.387080
BIN11	0.238449	0.419958	0.242087	0.364663
BIN12	0.021432	0.437391	0.067842	0.395892
BIN13	0.195094	0.408086	0.183239	0.375376
BIN14	-0.003551	0.438530	-0.002376	0.408063
BIN15	-0.058713	0.454063	-0.073339	0.420127
BIN16	0.080346	0.429256	0.062392	0.396845
BIN17	-0.220454	0.478929	-0.255844	0.450085
BIN18	0.222018	0.404477	0.236550	0.365678
BIN19	0.041727	0.436250	-0.014218	0.410093
BIN20	0.163675	0.414980	0.167326	0.378243
BIN21	0.127360	0.421221	0.113806	0.387798
BIN22	-0.069573	0.455767	-0.099350	0.424490
BIN23	0.044384	0.435699	0.070770	0.395380
BIN24	0.131881	0.419921	0.166827	0.378333
BIN25	0.406908	0.366784	0.387067	0.337533
BIN26	0.290382	0.391505	0.220327	0.368644
BIN27	-0.087902	0.446237	-0.053446	0.416769
BIN28	-0.088041	0.448426	-0.103260	0.425143
BIN29	0.138942	0.418915	0.153687	0.380691
BIN30	0.484868	0.358773	0.446382	0.326126
BIN31	0.238029	0.401061	0.207002	0.371070
BIN32	-0.087393	0.453318	-0.052174	0.416554
BIN33	0.535874	0.343115	0.515167	0.312670

ITEM macro: Original test data
Test 2

Correlation Analysis

1 'WITH' Variables:RIGHT
33 'VAR' Variables:BIN1 BIN2 BIN3 BIN4 BIN5 BIN6 BIN7 BIN8 BIN9 BIN10
BIN11 BIN12 BIN13 BIN14 BIN15 BIN16 BIN17 BIN18 BIN19 BIN20
BIN21 BIN22 BIN23 BIN24 BIN25 BIN26 BIN27 BIN28 BIN29 BIN30
BIN31 BIN32 BIN33

Simple Statistics

Variable	N (学生人数)	Mean	Std Dev	Sum	Minimum	Maximum
RIGHT (总分)	32	18.343750	3.394582	587.000000	12.000000	24.000000
BIN1	32	0.968750	0.176777	31.000000	0	1.000000
BIN2	32	0.781250	0.420013	25.000000	0	1.000000
BIN3	32	0.625000	0.491869	20.000000	0	1.000000
BIN4	32	0.093750	0.296145	3.000000	0	1.000000
BIN5	32	0.343750	0.482559	11.000000	0	1.000000
BIN6	32	0.656250	0.482559	21.000000	0	1.000000
BIN7	32	0.531250	0.507007	17.000000	0	1.000000
BIN8	32	0.343750	0.482559	11.000000	0	1.000000
BIN9	32	0.281250	0.456803	9.000000	0	1.000000
BIN10	32	0.562500	0.504016	18.000000	0	1.000000
BIN11	32	0.968750	0.176777	31.000000	0	1.000000
BIN12	32	0.781250	0.420013	25.000000	0	1.000000
BIN13	32	0.562500	0.504016	18.000000	0	1.000000
BIN14	32	0.875000	0.336011	28.000000	0	1.000000
BIN15	32	0.468750	0.507007	15.000000	0	1.000000
BIN16	32	0.531250	0.507007	17.000000	0	1.000000
BIN17	32	0.656250	0.482559	21.000000	0	1.000000
BIN18	32	0.687500	0.470929	22.000000	0	1.000000
BIN19	32	0.531250	0.507007	17.000000	0	1.000000
BIN20	32	0.718750	0.456803	23.000000	0	1.000000
BIN21	32	0.750000	0.439941	24.000000	0	1.000000
BIN22	32	0.437500	0.504016	14.000000	0	1.000000
BIN23	32	0.437500	0.504016	14.000000	0	1.000000
BIN24	32	0.625000	0.491869	20.000000	0	1.000000
BIN25	32	0.531250	0.507007	17.000000	0	1.000000
BIN26	32	0.343750	0.482559	11.000000	0	1.000000
BIN27	32	0.093750	0.296145	3.000000	0	1.000000
BIN28	32	0.875000	0.336011	28.000000	0	1.000000
BIN29	32	0.312500	0.470929	10.000000	0	1.000000
BIN30	32	0.718750	0.456803	23.000000	0	1.000000
BIN31	32	0.656250	0.482559	21.000000	0	1.000000
BIN32	32	0.218750	0.420013	7.000000	0	1.000000
BIN33	32	0.375000	0.491869	12.000000	0	1.000000

ITEM macro: Original test data
Test 2

Correlation Analysis (总分与各题分数的积差关系)

Pearson Correlation Coefficients / Prob > |R| under Ho: Rho=0 / N = 32

	BIN1	BIN2	BIN3	BIN4	BIN5	BIN6	BIN7	BIN8	BIN9	BIN10	BIN11
RIGHT	-0.03528 0.8480	0.07707 0.6750	0.38881 0.0279	-0.00100 0.9957	0.41785 0.0173	-0.37847 0.0327	0.24659 0.1737	0.29970 0.0956	0.33090 0.0643	0.29813 0.0975	0.28726 0.1109
	BIN12	BIN13	BIN14	BIN15	BIN16	BIN17	BIN18	BIN19	BIN20	BIN21	BIN22
RIGHT	0.14494 0.4287	0.33584 0.0602	0.09545 0.6033	0.09079 0.6212	0.22784 0.2098	-0.08308 0.6512	0.35187 0.0483	0.19036 0.2967	0.29319 0.1034	0.25380 0.1610	0.07895 0.6675
	BIN23	BIN24	BIN25	BIN26	BIN27	BIN28	BIN29	BIN30	BIN31	BIN32	BIN33
RIGHT	0.19208 0.2923	0.27289 0.1308	0.52773 0.0019	0.41785 0.0173	-0.00100 0.9957	0.01061 0.9541	0.27368 0.1296	0.58443 0.0004	0.36985 0.0372	0.03606 0.8447	0.63514 0.0001

[第六部分报表]

ITEM macro: Original test data
ITEM macro: Subtests

English Final (总测验, 与第二部分结果相同)

Grade Report

SSN	Score	#Missing	#Invalid	Percent
200465598	19	0	0	58%
233868923	14	0	0	42%
	20	0	0	61%
236909800	17	0	0	52%
235884995	16	0	0	48%
270606129	17	0	0	52%

188447596	23	0	0	70%
054389259	19	0	0	58%
130463838	18	0	0	55%
165463286	16	0	0	48%
217669611	13	1	0	39%
	22	1	0	67%
228761635	15	0	0	45%
236869018	16	0	0	48%
206422209	21	0	0	64%
081481581	24	0	0	73%
236562064	13	0	0	39%
296549834	16	0	0	48%
234908052	20	0	0	61%
407681435	20	0	0	61%
	19	1	0	58%
217289073	20	1	1	61%
	18	0	1	55%
234171262	12	0	0	36%
	12	0	0	36%
059486239	22	0	0	67%
232721382	23	0	0	70%
17638728	20	0	0	61%
	17	0	0	52%
194381114	23	0	0	70%
198424787	22	0	0	67%
190521297	20	0	0	61%

ITEM macro: Original test data

ITEM macro: Subtests

English Final(总测验)

Summary of Test Statistics(与第二部分结果相同)

Number of Items	33
Number of Subjects	32
Mean Score	18.344
Variance of Scores	11.523
Standard Deviation	3.395
Kuder-Richardson 20	0.433
Kuder-Richardson 21	0.279
Standard Error (from KR20)	2.555
Standard Error (from KR21)	2.883
Minimum Score	12
Maximum Score	24
Total Number of Answers	1056
Number Missing	4
Number Invalid	2

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 769 items

ITEM macro: Original test data

ITEM macro: Subtests

English Final(总测验)

Test Frequency Distribution(与第二部分结果相同)

Raw Score	Standard Score	Per- Centile	Percent	Freq	Cum Freq	Each X represents 1 score
24	667	98	3.1%	1	32	X

23	637	92	9.4%	3	31	XXX
22	608	82	9.4%	3	28	XXX
21	578	76	3.1%	1	25	X
20	549	65	18.8%	6	24	XXXXXX
19	519	51	9.4%	3	18	XXX
18	490	43	6.3%	2	15	XX
17	460	35	9.4%	3	13	XXX
16	431	25	12.5%	4	10	XXXX
15	401	17	3.1%	1	6	X
14	372	14	3.1%	1	5	X
13	343	9	6.3%	2	4	XX
12	313	3	6.3%	2	2	XX

ITEM macro: Original test data

ITEM macro: Subtests

English Final(总测验的试题分析, 结果与第二部分相同)

Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	3.1%	96.9%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	0.035	-0.035	0.000
Biserial	0.000	0.000	0.087	-0.087	0.000

Item-Remainder:

Point Bis	0.000	0.000	0.087	-0.087	0.000
Biserial	0.000	0.000	0.215	-0.215	0.000
t test	0.000	0.000	0.479	-0.479	0.000
Prob> t	1.0000	1.0000	0.6356	0.6356	1.0000

(其余 32 题的分析结果省略)

ITEM macro: Original test data

ITEM macro: Subtests

Spelling Proficiency(拼音子测验)

Grade Report

SSN	Score	#Missing	#Invalid	Percent
200465598	3	0	0	30%
233868923	4	0	0	40%
	5	0	0	50%
236909800	5	0	0	50%
235884995	2	0	0	20%
270606129	6	0	0	60%
188447596	6	0	0	60%
054389259	6	0	0	60%
130463838	5	0	0	50%
165463286	5	0	0	50%
217669611	5	1	0	50%
	6	0	0	60%
228761635	4	0	0	40%
236869018	4	0	0	40%
206422209	4	0	0	40%
081481581	6	0	0	60%
236562064	5	0	0	50%
296549834	5	0	0	50%
234908052	6	0	0	60%
407681435	7	0	0	70%
	3	0	0	30%
217289073	8	0	1	80%
	7	0	1	70%
234171262	5	0	0	50%
	2	0	0	20%
059486239	5	0	0	50%
232721382	8	0	0	80%
17638728	6	0	0	60%

	4	0	0	40%
194381114	7	0	0	70%
198424787	6	0	0	60%
190521297	6	0	0	60%

ITEM macro: Original test data
ITEM macro: Subtests

Spelling Proficiency(拼音子测验)

Summary of Test Statistics

Number of Items	10
Number of Subjects	32
Mean Score	5.188
Variance of Scores	2.222
Standard Deviation	1.491
Kuder-Richardson 20	0.133
Kuder-Richardson 21	-0.178
Standard Error (from KR20)	1.388
Standard Error (from KR21)	1.618
Minimum Score	2
Maximum Score	8
Total Number of Answers	320
Number Missing	1
Number Invalid	2

ITEM macro: Original test data
ITEM macro: Subtests

Spelling Proficiency(拼音子测验)

Test Frequency Distribution

Raw Score	Standard Score	Per-Centile	Percent	Freq	Cum Freq	Each X represents 1 score
8	689	96	6.3%	2	32	XX
7	622	89	9.4%	3	30	XXX
6	555	70	28.1%	9	27	XXXXXXXXX
5	487	42	28.1%	9	18	XXXXXXXXX
4	420	20	15.6%	5	9	XXXXX
3	353	9	6.3%	2	4	XX
2	286	3	6.3%	2	2	XX

ITEM macro: Original test data
ITEM macro: Subtests

Spelling Proficiency(拼音子测验)

Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	3.1%	96.9%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	11.1%	88.9%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	-0.268	0.268	0.000
Biserial	0.000	0.000	-0.662	0.662	0.000

Item-Remainder:

Point Bis	0.000	0.000	-0.153	0.153	0.000
Biserial	0.000	0.000	-0.378	0.378	0.000
t test	0.000	0.000	-0.848	0.848	0.000
Prob> t	1.0000	1.0000	0.4030	0.4030	1.0000

Item	2: * is keyed	1	2	3*	4	5	Omit	Invalid
Q2	Responses	6.3%	12.5%	78.1%	3.1%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	11.1%	22.2%	55.6%	11.1%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.121	-0.370	0.428	-0.145	0.000		
	Biserial	-0.238	-0.595	0.600	-0.359	0.000		
	Item-Remainder:							
	Point Bis	0.018	-0.185	0.160	-0.054	0.000		
	Biserial	0.035	-0.297	0.224	-0.134	0.000		
	t test	0.099	-1.029	0.888	-0.298	0.000		
	Prob> t	0.9220	0.3116	0.3815	0.7677	1.0000		
Item	3: * is keyed	1	2	3*	4	5	Omit	Invalid
Q3	Responses	15.6%	9.4%	62.5%	12.5%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	22.2%	33.3%	11.1%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.466	-0.260	0.539	-0.048	0.000		
	Biserial	-0.706	-0.453	0.688	-0.078	0.000		
	Item-Remainder:							
	Point Bis	-0.325	-0.142	0.241	0.130	0.000		
	Biserial	-0.493	-0.247	0.307	0.209	0.000		
	t test	-1.884	-0.786	1.359	0.717	0.000		
	Prob> t	0.0692	0.4379	0.1843	0.4787	1.0000		
Item	4: * is keyed	1	2	3*	4	5	Omit	Invalid
Q4	Responses	50.0%	6.3%	9.4%	34.4%	0.0%	0.0%	0.0%
	Upper 33%	40.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%
	Lower 33%	77.8%	0.0%	0.0%	22.2%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.383	0.231	0.251	0.132	0.000		
	Biserial	-0.481	0.455	0.437	0.170	0.000		
	Item-Remainder:							
	Point Bis	-0.330	0.255	0.054	0.184	0.000		
	Biserial	-0.413	0.503	0.094	0.237	0.000		
	t test	-1.912	1.446	0.297	1.023	0.000		
	Prob> t	0.0654	0.1584	0.7683	0.3144	1.0000		
Item	5: * is keyed	1	2*	3	4	5	Omit	Invalid
Q5	Responses	12.5%	34.4%	25.0%	25.0%	0.0%	3.1%	0.0%
	Upper 33%	0.0%	60.0%	20.0%	20.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	0.0%	55.6%	11.1%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.564	0.491	-0.221	0.123	0.000		
	Biserial	-0.905	0.633	-0.302	0.168	0.000		
	Item-Remainder:							
	Point Bis	-0.535	0.188	-0.097	0.291	0.000		
	Biserial	-0.860	0.243	-0.132	0.397	0.000		
	t test	-3.472	1.048	-0.534	1.666	0.000		
	Prob> t	0.0016	0.3029	0.5973	0.1060	1.0000		
Item	6: * is keyed	1*	2	3	4	5	Omit	Invalid
Q6	Responses	65.6%	0.0%	18.8%	9.4%	0.0%	0.0%	6.3%
	Upper 33%	20.0%	0.0%	20.0%	20.0%	0.0%	0.0%	40.0%
	Lower 33%	77.8%	0.0%	22.2%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.311	0.000	-0.061	0.251	0.000		
	Biserial	-0.402	0.000	-0.089	0.437	0.000		
	Item-Remainder:							
	Point Bis	-0.555	0.000	0.134	0.346	0.000		

		Biserial	-0.717	0.000	0.195	0.602	0.000		
		t test	-3.659	0.000	0.742	2.018	0.000		
		Prob> t	0.0010	1.0000	0.4637	0.0526	1.0000		
Item	7: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q7		Responses	15.6%	53.1%	28.1%	3.1%	0.0%	0.0%	0.0%
		Upper 33%	20.0%	80.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	22.2%	22.2%	55.6%	0.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	-0.055	0.462	-0.459	-0.023	0.000		
		Biserial	-0.083	0.579	-0.612	-0.057	0.000		
		Item-Remainder:							
		Point Bis	0.113	0.136	-0.260	0.047	0.000		
		Biserial	0.171	0.170	-0.346	0.116	0.000		
		t test	0.621	0.749	-1.472	0.258	0.000		
		Prob> t	0.5395	0.4594	0.1513	0.7984	1.0000		
Item	8: *	is keyed	1*	2	3	4	5	Omit	Invalid
Q8		Responses	34.4%	46.9%	9.4%	9.4%	0.0%	0.0%	0.0%
		Upper 33%	80.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	11.1%	66.7%	0.0%	22.2%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	0.446	-0.205	0.032	-0.406	0.000		
		Biserial	0.575	-0.258	0.056	-0.708	0.000		
		Item-Remainder:							
		Point Bis	0.135	0.016	0.119	-0.367	0.000		
		Biserial	0.174	0.020	0.207	-0.638	0.000		
		t test	0.746	0.089	0.655	-2.158	0.000		
		Prob> t	0.4615	0.9297	0.5172	0.0391	1.0000		
Item	9: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q9		Responses	9.4%	28.1%	34.4%	28.1%	0.0%	0.0%	0.0%
		Upper 33%	0.0%	80.0%	0.0%	20.0%	0.0%	0.0%	0.0%
		Lower 33%	11.1%	22.2%	44.4%	22.2%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	-0.114	0.394	-0.272	-0.033	0.000		
		Biserial	-0.199	0.525	-0.351	-0.043	0.000		
		Item-Remainder:							
		Point Bis	-0.057	0.095	-0.144	0.095	0.000		
		Biserial	-0.099	0.126	-0.186	0.126	0.000		
		t test	-0.312	0.520	-0.798	0.520	0.000		
		Prob> t	0.7571	0.6065	0.4311	0.6065	1.0000		
Item	10: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q10		Responses	0.0%	56.3%	9.4%	34.4%	0.0%	0.0%	0.0%
		Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	0.0%	22.2%	22.2%	55.6%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	0.000	0.413	-0.260	-0.272	0.000		
		Biserial	0.000	0.520	-0.453	-0.351	0.000		
		Item-Remainder:							
		Point Bis	0.000	0.082	-0.150	0.006	0.000		
		Biserial	0.000	0.104	-0.261	0.008	0.000		
		t test	0.000	0.452	-0.831	0.034	0.000		
		Prob> t	1.0000	0.6545	0.4127	0.9734	1.0000		

ITEM macro: Original test data

ITEM macro: Subtests

Grammar Proficiency(文法子测验)

Grade Report

SSN	Score	#Missing	#Invalid	Percent
200465598	16	0	0	70%
233868923	10	0	0	43%
	15	0	0	65%
236909800	12	0	0	52%
235884995	14	0	0	61%
270606129	11	0	0	48%
188447596	17	0	0	74%
054389259	13	0	0	57%
130463838	13	0	0	57%
165463286	11	0	0	48%
217669611	8	0	0	35%
	16	1	0	70%
228761635	11	0	0	48%
236869018	12	0	0	52%
206422209	17	0	0	74%
081481581	18	0	0	78%
236562064	8	0	0	35%
296549834	11	0	0	48%
234908052	14	0	0	61%
407681435	13	0	0	57%
	16	1	0	70%
217289073	12	1	0	52%
	11	0	0	48%
234171262	7	0	0	30%
	10	0	0	43%
059486239	17	0	0	74%
232721382	15	0	0	65%
17638728	14	0	0	61%
	13	0	0	57%
194381114	16	0	0	70%
198424787	16	0	0	70%
190521297	14	0	0	61%

ITEM macro: Original test data

ITEM macro: Subtests

Grammar Proficiency(文法子测验)

Summary of Test Statistics

Number of Items	23
Number of Subjects	32
Mean Score	13.156
Variance of Scores	8.265
Standard Deviation	2.875
Kuder-Richardson 20	0.448
Kuder-Richardson 21	0.310
Standard Error (from KR20)	2.136
Standard Error (from KR21)	2.388
Minimum Score	7
Maximum Score	18
Total Number of Answers	736
Number Missing	3
Number Invalid	0

Spearman-Brown Prophecy (from KR21):
 To obtain a reliability of 0.90
 the test should contain 461 items

ITEM macro: Original test data

ITEM macro: Subtests

Grammar Proficiency(文法子测验)

Test Frequency Distribution

Raw Score	Standard Score	Per-Centile	Percent	Cum Freq		Each X represents 1 score
18	668	98	3.1%	1	32	X
17	634	92	9.4%	3	31	XXX
16	599	79	15.6%	5	28	XXXXX
15	564	68	6.3%	2	23	XX
14	529	59	12.5%	4	21	XXXX
13	495	46	12.5%	4	17	XXXX
12	460	35	9.4%	3	13	XXX
11	425	23	15.6%	5	10	XXXXX
10	390	12	6.3%	2	5	XX
9	355	9	0.0%	0	3	
8	321	6	6.3%	2	3	XX
7	286	1	3.1%	1	1	X

ITEM macro: Original test data

ITEM macro: Subtests

Grammar Proficiency(文法子测验)

Item 11: * is keyed	1	2*	3	4	5	Omit	Invalid
Q11 Responses	3.1%	96.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower 33%	10.0%	90.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.327	0.327	0.000	0.000	0.000
Biserial	-0.809	0.809	0.000	0.000	0.000

Item-Remainder:

Point Bis	-0.271	0.271	0.000	0.000	0.000
Biserial	-0.669	0.669	0.000	0.000	0.000
t test	-1.541	1.541	0.000	0.000	0.000
Prob> t	0.1339	0.1339	1.0000	1.0000	1.0000

Item 12: * is keyed	1	2	3*	4	5	Omit	Invalid
Q12 Responses	3.1%	3.1%	78.1%	15.6%	0.0%	0.0%	0.0%
Upper 33%	11.1%	0.0%	88.9%	0.0%	0.0%	0.0%	0.0%
Lower 33%	0.0%	10.0%	70.0%	20.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.181	-0.137	0.243	-0.298	0.000
Biserial	0.446	-0.338	0.340	-0.451	0.000

Item-Remainder:

Point Bis	0.236	-0.090	0.099	-0.183	0.000
Biserial	0.583	-0.221	0.139	-0.278	0.000
t test	1.330	-0.492	0.547	-1.021	0.000
Prob> t	0.1934	0.6261	0.5886	0.3153	1.0000

Item 13: * is keyed	1	2	3*	4	5	Omit	Invalid
Q13 Responses	3.1%	25.0%	56.3%	12.5%	0.0%	3.1%	0.0%
Upper 33%	0.0%	11.1%	77.8%	11.1%	0.0%	0.0%	0.0%
Lower 33%	10.0%	40.0%	40.0%	10.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.200	-0.287	0.383	-0.054	0.000
Biserial	-0.495	-0.391	0.482	-0.087	0.000

Item-Remainder:

Point Bis	-0.174	-0.182	0.219	0.022	0.000
Biserial	-0.430	-0.248	0.276	0.035	0.000
t test	-0.967	-1.013	1.229	0.121	0.000
Prob> t	0.3412	0.3193	0.2286	0.9047	1.0000

Item 14: * is keyed	1*	2	3	4	5	Omit	Invalid
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Q14	Responses	87.5%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	88.9%	0.0%	11.1%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	80.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.121	0.000	-0.121	0.000	0.000		
	Biserial	0.194	0.000	-0.194	0.000	0.000		
Item-Remainder:								
	Point Bis	0.004	0.000	-0.004	0.000	0.000		
	Biserial	0.007	0.000	-0.007	0.000	0.000		
	t test	0.023	0.000	-0.023	0.000	0.000		
	Prob> t	0.9818	1.0000	0.9818	1.0000	1.0000		
Item 15:	* is keyed	1*	2	3	4	5	Omit	Invalid
Q15	Responses	46.9%	6.3%	28.1%	18.8%	0.0%	0.0%	0.0%
	Upper 33%	44.4%	11.1%	44.4%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	20.0%	0.0%	40.0%	40.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.125	0.077	0.039	-0.253	0.000		
	Biserial	0.157	0.152	0.052	-0.367	0.000		
Item-Remainder:								
	Point Bis	-0.052	0.121	0.144	-0.174	0.000		
	Biserial	-0.065	0.237	0.192	-0.253	0.000		
	t test	-0.283	0.665	0.795	-0.970	0.000		
	Prob> t	0.7795	0.5110	0.4326	0.3396	1.0000		
Item 16:	* is keyed	1	2	3	4*	5	Omit	Invalid
Q16	Responses	0.0%	3.1%	40.6%	53.1%	0.0%	3.1%	0.0%
	Upper 33%	0.0%	11.1%	11.1%	66.7%	0.0%	11.1%	0.0%
	Lower 33%	0.0%	0.0%	60.0%	40.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.181	-0.450	0.317	0.000		
	Biserial	0.000	0.446	-0.570	0.398	0.000		
Item-Remainder:								
	Point Bis	0.000	0.223	-0.308	0.147	0.000		
	Biserial	0.000	0.552	-0.390	0.185	0.000		
	t test	0.000	1.256	-1.772	0.815	0.000		
	Prob> t	1.0000	0.2189	0.0865	0.4216	1.0000		
Item 17:	* is keyed	1	2	3	4*	5	Omit	Invalid
Q17	Responses	0.0%	6.3%	28.1%	65.6%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	22.2%	77.8%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	30.0%	70.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	-0.014	-0.108	0.110	0.000		
	Biserial	0.000	-0.028	-0.144	0.142	0.000		
Item-Remainder:								
	Point Bis	0.000	0.046	0.037	-0.058	0.000		
	Biserial	0.000	0.090	0.049	-0.075	0.000		
	t test	0.000	0.251	0.203	-0.320	0.000		
	Prob> t	1.0000	0.8033	0.8406	0.7509	1.0000		
Item 18:	* is keyed	1	2	3	4*	5	Omit	Invalid
Q18	Responses	18.8%	12.5%	0.0%	68.8%	0.0%	0.0%	0.0%
	Upper 33%	11.1%	0.0%	0.0%	88.9%	0.0%	0.0%	0.0%
	Lower 33%	30.0%	20.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.309	-0.188	0.000	0.395	0.000		
	Biserial	-0.449	-0.302	0.000	0.517	0.000		
Item-Remainder:								
	Point Bis	-0.203	-0.101	0.000	0.244	0.000		
	Biserial	-0.295	-0.163	0.000	0.319	0.000		

		t test	-1.138	-0.558	0.000	1.376	0.000		
		Prob> t	0.2640	0.5810	1.0000	0.1790	1.0000		
Item	19: * is keyed	1	2	3*	4	5	Omit	Invalid	
Q19	Responses	34.4%	9.4%	53.1%	3.1%	0.0%	0.0%	0.0%	
	Upper 33%	33.3%	0.0%	66.7%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	40.0%	30.0%	30.0%	0.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.076	-0.397	0.163	-0.010	0.000			
	Biserial	0.098	-0.691	0.204	-0.025	0.000			
	Item-Remainder:								
	Point Bis	0.215	-0.341	-0.014	0.024	0.000			
	Biserial	0.278	-0.593	-0.018	0.060	0.000			
	t test	1.206	-1.985	-0.077	0.132	0.000			
	Prob> t	0.2373	0.0563	0.9393	0.8957	1.0000			
Item	20: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q20	Responses	71.9%	18.8%	0.0%	9.4%	0.0%	0.0%	0.0%	
	Upper 33%	88.9%	11.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	60.0%	30.0%	0.0%	10.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.305	-0.253	0.000	-0.131	0.000			
	Biserial	0.406	-0.367	0.000	-0.229	0.000			
	Item-Remainder:								
	Point Bis	0.151	-0.136	0.000	-0.052	0.000			
	Biserial	0.202	-0.197	0.000	-0.090	0.000			
	t test	0.839	-0.751	0.000	-0.283	0.000			
	Prob> t	0.4083	0.4586	1.0000	0.7791	1.0000			
Item	21: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q21	Responses	12.5%	75.0%	3.1%	9.4%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	88.9%	0.0%	11.1%	0.0%	0.0%	0.0%	
	Lower 33%	10.0%	70.0%	10.0%	10.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.154	0.261	-0.327	-0.018	0.000			
	Biserial	-0.248	0.356	-0.809	-0.031	0.000			
	Item-Remainder:								
	Point Bis	-0.056	0.112	-0.288	0.069	0.000			
	Biserial	-0.090	0.152	-0.712	0.121	0.000			
	t test	-0.306	0.615	-1.647	0.382	0.000			
	Prob> t	0.7614	0.5431	0.1100	0.7055	1.0000			
Item	22: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q22	Responses	43.8%	3.1%	25.0%	28.1%	0.0%	0.0%	0.0%	
	Upper 33%	55.6%	11.1%	22.2%	11.1%	0.0%	0.0%	0.0%	
	Lower 33%	40.0%	0.0%	30.0%	30.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.152	0.307	-0.159	-0.133	0.000			
	Biserial	0.191	0.760	-0.217	-0.177	0.000			
	Item-Remainder:								
	Point Bis	-0.024	0.339	-0.071	-0.036	0.000			
	Biserial	-0.030	0.838	-0.097	-0.049	0.000			
	t test	-0.131	1.974	-0.390	-0.200	0.000			
	Prob> t	0.8966	0.0577	0.6996	0.8428	1.0000			
Item	23: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q23	Responses	0.0%	50.0%	6.3%	43.8%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	55.6%	0.0%	44.4%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	40.0%	20.0%	40.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.000	0.166	-0.334	-0.004	0.000			

		Biserial	0.000	0.208	-0.657	-0.005	0.000		
		Item-Remainder:							
		Point Bis	0.000	0.315	-0.289	-0.177	0.000		
		Biserial	0.000	0.395	-0.569	-0.222	0.000		
		t test	0.000	1.819	-1.654	-0.983	0.000		
		Prob> t	1.0000	0.0788	0.1086	0.3334	1.0000		
Item	24: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q24	Responses	62.5%	15.6%	15.6%	6.3%	0.0%	0.0%	0.0%	
	Upper 33%	77.8%	11.1%	0.0%	11.1%	0.0%	0.0%	0.0%	
	Lower 33%	50.0%	10.0%	40.0%	0.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	0.271	0.098	-0.541	0.123	0.000		
		Biserial	0.346	0.148	-0.820	0.241	0.000		
		Item-Remainder:							
		Point Bis	0.103	0.199	-0.461	0.186	0.000		
		Biserial	0.132	0.302	-0.698	0.365	0.000		
		t test	0.568	1.114	-2.843	1.035	0.000		
		Prob> t	0.5743	0.2740	0.0080	0.3091	1.0000		
Item	25: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q25	Responses	21.9%	53.1%	18.8%	6.3%	0.0%	0.0%	0.0%	
	Upper 33%	11.1%	88.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	30.0%	20.0%	50.0%	0.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	-0.243	0.561	-0.479	0.031	0.000		
		Biserial	-0.340	0.704	-0.695	0.062	0.000		
		Item-Remainder:							
		Point Bis	-0.157	0.421	-0.426	0.087	0.000		
		Biserial	-0.220	0.529	-0.618	0.172	0.000		
		t test	-0.872	2.544	-2.581	0.481	0.000		
		Prob> t	0.3899	0.0163	0.0150	0.6341	1.0000		
Item	26: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q26	Responses	18.8%	34.4%	46.9%	0.0%	0.0%	0.0%	0.0%	
	Upper 33%	11.1%	66.7%	22.2%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	40.0%	10.0%	50.0%	0.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	-0.309	0.472	-0.207	0.000	0.000		
		Biserial	-0.449	0.609	-0.259	0.000	0.000		
		Item-Remainder:							
		Point Bis	-0.269	0.326	-0.099	0.000	0.000		
		Biserial	-0.390	0.420	-0.125	0.000	0.000		
		t test	-1.531	1.887	-0.547	0.000	0.000		
		Prob> t	0.1362	0.0689	0.5885	1.0000	1.0000		
Item	27: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q27	Responses	6.3%	84.4%	0.0%	9.4%	0.0%	0.0%	0.0%	
	Upper 33%	11.1%	88.9%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	80.0%	0.0%	20.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	0.123	-0.007	0.000	-0.094	0.000		
		Biserial	0.241	-0.010	0.000	-0.163	0.000		
		Item-Remainder:							
		Point Bis	0.129	0.069	0.000	-0.194	0.000		
		Biserial	0.254	0.105	0.000	-0.337	0.000		
		t test	0.714	0.381	0.000	-1.081	0.000		
		Prob> t	0.4808	0.7062	1.0000	0.2882	1.0000		
Item	28: * is keyed	1*	2	3	4	5	Omit	Invalid	

Q28	Responses	87.5%	0.0%	3.1%	9.4%	0.0%	0.0%	0.0%
	Upper 33%	88.9%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%
	Lower 33%	80.0%	0.0%	0.0%	20.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.054	0.000	-0.010	-0.056	0.000		
	Biserial	0.087	0.000	-0.025	-0.097	0.000		
Item-Remainder:								
	Point Bis	-0.063	0.000	0.046	0.044	0.000		
	Biserial	-0.101	0.000	0.113	0.076	0.000		
	t test	-0.343	0.000	0.250	0.240	0.000		
	Prob> t	0.7337	1.0000	0.8043	0.8119	1.0000		
Item 29: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q29	Responses	9.4%	31.3%	0.0%	59.4%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	55.6%	0.0%	44.4%	0.0%	0.0%	0.0%
	Lower 33%	10.0%	20.0%	0.0%	70.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.131	0.273	0.000	-0.179	0.000		
	Biserial	-0.229	0.357	0.000	-0.227	0.000		
Item-Remainder:								
	Point Bis	-0.099	0.112	0.000	-0.047	0.000		
	Biserial	-0.172	0.147	0.000	-0.060	0.000		
	t test	-0.545	0.619	0.000	-0.259	0.000		
	Prob> t	0.5897	0.5407	1.0000	0.7977	1.0000		
Item 30: *	is keyed	1	2	3*	4	5	Omit	Invalid
Q30	Responses	0.0%	3.1%	71.9%	25.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	10.0%	40.0%	50.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	-0.137	0.526	-0.491	0.000		
	Biserial	0.000	-0.338	0.701	-0.669	0.000		
Item-Remainder:								
	Point Bis	0.000	-0.098	0.396	-0.372	0.000		
	Biserial	0.000	-0.243	0.528	-0.506	0.000		
	t test	0.000	-0.542	2.363	-2.193	0.000		
	Prob> t	1.0000	0.5917	0.0248	0.0362	1.0000		
Item 31: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q31	Responses	3.1%	65.6%	3.1%	28.1%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	40.0%	10.0%	50.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.117	0.459	-0.137	-0.477	0.000		
	Biserial	0.289	0.592	-0.338	-0.635	0.000		
Item-Remainder:								
	Point Bis	0.170	0.311	-0.102	-0.355	0.000		
	Biserial	0.420	0.401	-0.252	-0.473	0.000		
	t test	0.943	1.791	-0.561	-2.078	0.000		
	Prob> t	0.3531	0.0833	0.5792	0.0464	1.0000		
Item 32: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q32	Responses	40.6%	21.9%	12.5%	21.9%	0.0%	3.1%	0.0%
	Upper 33%	22.2%	33.3%	11.1%	22.2%	0.0%	11.1%	0.0%
	Lower 33%	40.0%	30.0%	30.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.023	-0.083	-0.221	0.211	0.000		
	Biserial	-0.029	-0.116	-0.355	0.296	0.000		
Item-Remainder:								
	Point Bis	0.042	-0.043	-0.196	0.066	0.000		

		Biserial	0.053	-0.060	-0.315	0.093	0.000		
		t test	0.228	-0.234	-1.095	0.365	0.000		
		Prob> t	0.8211	0.8169	0.2823	0.7178	1.0000		
Item	33: * is keyed	1	2	3*	4	5	Omit	Invalid	
Q33	Responses	3.1%	31.3%	37.5%	28.1%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	11.1%	77.8%	11.1%	0.0%	0.0%	0.0%	
	Lower 33%	10.0%	50.0%	0.0%	40.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.137	-0.204	0.596	-0.378	0.000			
	Biserial	-0.338	-0.267	0.761	-0.504	0.000			
	Item-Remainder:								
	Point Bis	-0.124	-0.126	0.468	-0.325	0.000			
	Biserial	-0.308	-0.165	0.597	-0.434	0.000			
	t test	-0.687	-0.697	2.898	-1.884	0.000			
	Prob> t	0.4974	0.4912	0.0070	0.0693	1.0000			

[第六部分 PROC PRINT 的报表]

ITEM macro: Original test data

ITEM macro: Subtests

<u>SUB</u>	SSN	SCORE	MISSING	INVALID	PERCENT
English Final	200465598	19	0	0	57.5758
English Final	233868923	14	0	0	42.4242
English Final		20	0	0	60.6061
English Final	236909800	17	0	0	51.5152
English Final	235884995	16	0	0	48.4848
English Final	270606129	17	0	0	51.5152
English Final	188447596	23	0	0	69.6970
English Final	054389259	19	0	0	57.5758
English Final	130463838	18	0	0	54.5455
English Final	165463286	16	0	0	48.4848
English Final	217669611	13	1	0	39.3939
English Final		22	1	0	66.6667
English Final	228761635	15	0	0	45.4545
English Final	236869018	16	0	0	48.4848
English Final	206422209	21	0	0	63.6364
English Final	081481581	24	0	0	72.7273
English Final	236562064	13	0	0	39.3939
English Final	296549834	16	0	0	48.4848
English Final	234908052	20	0	0	60.6061
English Final	407681435	20	0	0	60.6061
English Final		19	1	0	57.5758
English Final	217289073	20	1	1	60.6061
English Final		18	0	1	54.5455
English Final	234171262	12	0	0	36.3636
English Final		12	0	0	36.3636
English Final	059486239	22	0	0	66.6667
English Final	232721382	23	0	0	69.6970
English Final	17638728	20	0	0	60.6061
English Final		17	0	0	51.5152
English Final	194381114	23	0	0	69.6970
English Final	198424787	22	0	0	66.6667
English Final	190521297	20	0	0	60.6061
Spelling Proficiency	200465598	3	0	0	30.0000
Spelling Proficiency	233868923	4	0	0	40.0000
Spelling Proficiency		5	0	0	50.0000
Spelling Proficiency	236909800	5	0	0	50.0000
Spelling Proficiency	235884995	2	0	0	20.0000
Spelling Proficiency	270606129	6	0	0	60.0000
Spelling Proficiency	188447596	6	0	0	60.0000
Spelling Proficiency	054389259	6	0	0	60.0000
Spelling Proficiency	130463838	5	0	0	50.0000
Spelling Proficiency	165463286	5	0	0	50.0000
Spelling Proficiency	217669611	5	1	0	50.0000
Spelling Proficiency		6	0	0	60.0000
Spelling Proficiency	228761635	4	0	0	40.0000

Spelling Proficiency	236869018	4	0	0	40.0000
Spelling Proficiency	206422209	4	0	0	40.0000
Spelling Proficiency	081481581	6	0	0	60.0000
Spelling Proficiency	236562064	5	0	0	50.0000
Spelling Proficiency	296549834	5	0	0	50.0000
Spelling Proficiency	234908052	6	0	0	60.0000
Spelling Proficiency	407681435	7	0	0	70.0000
Spelling Proficiency		3	0	0	30.0000
Spelling Proficiency	217289073	8	0	1	80.0000
Spelling Proficiency		7	0	1	70.0000
Spelling Proficiency	234171262	5	0	0	50.0000
Spelling Proficiency		2	0	0	20.0000
Spelling Proficiency	059486239	5	0	0	50.0000
Spelling Proficiency	232721382	8	0	0	80.0000
Spelling Proficiency	17638728	6	0	0	60.0000
Spelling Proficiency		4	0	0	40.0000
Spelling Proficiency	194381114	7	0	0	70.0000
Spelling Proficiency	198424787	6	0	0	60.0000
Spelling Proficiency	190521297	6	0	0	60.0000
Grammar Proficiency	200465598	16	0	0	69.5652
Grammar Proficiency	233868923	10	0	0	43.4783
Grammar Proficiency		15	0	0	65.2174
Grammar Proficiency	236909800	12	0	0	52.1739
Grammar Proficiency	235884995	14	0	0	60.8696
Grammar Proficiency	270606129	11	0	0	47.8261
Grammar Proficiency	188447596	17	0	0	73.9130
Grammar Proficiency	054389259	13	0	0	56.5217
Grammar Proficiency	130463838	13	0	0	56.5217
Grammar Proficiency	165463286	11	0	0	47.8261
Grammar Proficiency	217669611	8	0	0	34.7826
Grammar Proficiency		16	1	0	69.5652
Grammar Proficiency	228761635	11	0	0	47.8261
Grammar Proficiency	236869018	12	0	0	52.1739
Grammar Proficiency	206422209	17	0	0	73.9130
Grammar Proficiency	081481581	18	0	0	78.2609
Grammar Proficiency	236562064	8	0	0	34.7826
Grammar Proficiency	296549834	11	0	0	47.8261
Grammar Proficiency	234908052	14	0	0	60.8696
Grammar Proficiency	407681435	13	0	0	56.5217
Grammar Proficiency		16	1	0	69.5652
Grammar Proficiency	217289073	12	1	0	52.1739
Grammar Proficiency		11	0	0	47.8261
Grammar Proficiency	234171262	7	0	0	30.4348
Grammar Proficiency		10	0	0	43.4783
Grammar Proficiency	059486239	17	0	0	73.9130
Grammar Proficiency	232721382	15	0	0	65.2174
Grammar Proficiency	17638728	14	0	0	60.8696
Grammar Proficiency		13	0	0	56.5217
Grammar Proficiency	194381114	16	0	0	69.5652
Grammar Proficiency	198424787	16	0	0	69.5652
Grammar Proficiency	190521297	14	0	0	60.8696

[第六部分 PROC CORR 的报表]

ITEM macro: Original test data

ITEM macro: Subtests

Correlation Analysis

10 'VAR' Variables: BIN1 BIN2 BIN3 BIN4 BIN5 BIN6 BIN7 BIN8
BIN9 BIN10

(拼音子测验)

ITEM macro: Original test data

ITEM macro: Subtests

Correlation Analysis

Cronbach Coefficient Alpha

for RAW variables : 0.133091

for STANDARDIZED variables: 0.177060

Raw Variables					Std. Variables				
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha	Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
BIN1	0.153035	0.099881	0.136502	0.115625					
BIN2	0.160062	0.049946	0.139637	0.113708					
BIN3	0.240815	-0.027108	0.267926	0.032130					
BIN4	0.054185	0.118421	0.069473	0.155778					
BIN5	0.187971	0.016859	0.229738	0.057057					
BIN6	-0.555484	0.457190	-0.547312	0.457002					
BIN7	0.135567	0.052207	0.171199	0.094204					
BIN8	0.134958	0.056281	0.146695	0.109378					
BIN9	0.094603	0.087414	0.030390	0.178458					
BIN10	0.082239	0.092935	0.095327	0.140480					
ITEM macro: Original test data									
ITEM macro: Subtests									
Correlation Analysis									
23 'VAR' Variables: BIN11 BIN12 BIN13 BIN14 BIN15 BIN16 BIN17 BIN18 BIN19 BIN20									
(文法子测验) BIN21 BIN22 BIN23 BIN24 BIN25 BIN26 BIN27 BIN28 BIN29 BIN30									
BIN31 BIN32 BIN33									
ITEM macro: Original test data									
ITEM macro: Subtests									
Correlation Analysis									
Cronbach Coefficient Alpha									
for RAW variables : 0.447815									
for STANDARDIZED variables: 0.437642									
Raw Variables					Std. Variables				
Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha	Deleted Variable	Correlation with Total	Alpha	Correlation with Total	Alpha
BIN11	0.270776	0.430187	0.275469	0.394488					
BIN12	0.099338	0.440990	0.146767	0.420992					
BIN13	0.218949	0.415570	0.226570	0.404685					
BIN14	0.004205	0.454370	0.005385	0.448884					
BIN15	-0.051515	0.473837	-0.056877	0.460770					
BIN16	0.147160	0.431503	0.113555	0.427658					
BIN17	-0.058384	0.473285	-0.069514	0.463154					
BIN18	0.243636	0.411702	0.275104	0.394565					
BIN19	-0.014017	0.466075	-0.044334	0.458395					
BIN20	0.151363	0.431049	0.148635	0.420615					
BIN21	0.111598	0.438822	0.108916	0.428584					
BIN22	-0.023924	0.467932	-0.026454	0.454992					
BIN23	-0.176668	0.498619	-0.173886	0.482471					
BIN24	0.103126	0.440930	0.154171	0.419497					
BIN25	0.421241	0.368016	0.414877	0.364542					
BIN26	0.325660	0.393077	0.288661	0.391710					
BIN27	-0.193675	0.476912	-0.175739	0.482808					
BIN28	-0.062582	0.463623	-0.086295	0.466304					
BIN29	0.112270	0.438836	0.121573	0.426055					
BIN30	0.396077	0.380573	0.374566	0.373335					
BIN31	0.310853	0.396365	0.294238	0.390532					
BIN32	0.066473	0.446849	0.086673	0.433002					
BIN33	0.467673	0.359166	0.432475	0.360668					

[第七部分报表]

ITEM macro: BY groups
Two BY groups

----- BY=1 (第一分组, 前 20 人) -----

Grade Report

SSN	Score	#Missing	#Invalid	Percent
200465598	19	0	0	58%
233868923	14	0	0	42%
	20	0	0	61%
236909800	17	0	0	52%
235884995	16	0	0	48%
270606129	17	0	0	52%
188447596	23	0	0	70%
054389259	19	0	0	58%
130463838	18	0	0	55%
165463286	16	0	0	48%
217669611	13	1	0	39%
	22	1	0	67%
228761635	15	0	0	45%
236869018	16	0	0	48%
206422209	21	0	0	64%
081481581	24	0	0	73%
236562064	13	0	0	39%
296549834	16	0	0	48%
234908052	20	0	0	61%
407681435	20	0	0	61%

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Summary of Test Statistics

Number of Items	33
Number of Subjects	20
Mean Score	17.950
Variance of Scores	10.155
Standard Deviation	3.187
Kuder-Richardson 20	0.361
Kuder-Richardson 21	0.156
Standard Error (from KR20)	2.548
Standard Error (from KR21)	2.927
Minimum Score	13
Maximum Score	24
Total Number of Answers	660
Number Missing	2
Number Invalid	0

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 1605 items

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Test Frequency Distribution

Raw Score	Standard Score	Per- Centile	Percent	Cum Freq	Cum Freq	Each X represents 1 score
24	690	97	5.0%	1	20	X
23	658	92	5.0%	1	19	X
22	627	87	5.0%	1	18	X
21	596	82	5.0%	1	17	X
20	564	72	15.0%	3	16	XXX

19	533	60	10.0%	2	13	XX
18	502	52	5.0%	1	11	X
17	470	45	10.0%	2	10	XX
16	439	30	20.0%	4	8	XXXX
15	407	17	5.0%	1	4	X
14	376	12	5.0%	1	3	X
13	345	5	10.0%	2	2	XX

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	0.000	0.000	0.000
Biserial	0.000	0.000	0.000	0.000	0.000

Item-Remainder:

Point Bis	0.000	0.000	0.000	0.000	0.000
Biserial	0.000	0.000	0.000	0.000	0.000
t test	0.000	0.000	0.000	0.000	0.000
Prob> t	1.0000	1.0000	1.0000	1.0000	1.0000

Item	2: * is keyed	1	2	3*	4	5	Omit	Invalid
Q2	Responses	10.0%	15.0%	70.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.274	0.142	-0.186	-0.218	0.000
Biserial	0.468	0.217	-0.245	-0.460	0.000

Item-Remainder:

Point Bis	0.336	0.228	-0.322	-0.160	0.000
Biserial	0.575	0.349	-0.424	-0.338	0.000
t test	1.514	0.994	-1.441	-0.688	0.000
Prob> t	0.1473	0.3334	0.1667	0.5000	1.0000

Item	3: * is keyed	1	2	3*	4	5	Omit	Invalid
Q3	Responses	15.0%	5.0%	60.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.083	-0.144	0.118	0.008	0.000
Biserial	-0.128	-0.304	0.150	0.011	0.000

Item-Remainder:

Point Bis	-0.002	-0.100	-0.040	0.105	0.000
Biserial	-0.003	-0.212	-0.050	0.150	0.000
t test	-0.010	-0.428	-0.168	0.449	0.000
Prob> t	0.9924	0.6738	0.8681	0.6586	1.0000

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	4: * is keyed	1	2	3*	4	5	Omit	Invalid
Q4	Responses	55.0%	5.0%	0.0%	40.0%	0.0%	0.0%	0.0%
	Upper 33%	25.0%	0.0%	0.0%	75.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	25.0%	0.0%	50.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.047	-0.366	0.000	0.210	0.000
Biserial	-0.059	-0.773	0.000	0.267	0.000

Item-Remainder:								
Point Bis		-0.047	-0.366	0.000	0.210	0.000		
Biserial		-0.059	-0.773	0.000	0.267	0.000		
t test		-0.199	-1.667	0.000	0.913	0.000		
Prob> t		0.8443	0.1129	1.0000	0.3735	1.0000		
Item	5: * is keyed	1	2*	3	4	5	Omit	Invalid
Q5	Responses	15.0%	35.0%	30.0%	15.0%	0.0%	5.0%	0.0%
	Upper 33%	0.0%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	50.0%	25.0%	0.0%	25.0%	0.0%
Item-Total:								
Point Bis		-0.083	0.417	-0.130	-0.083	0.000		
Biserial		-0.128	0.537	-0.171	-0.128	0.000		
Item-Remainder:								
Point Bis		-0.038	0.278	-0.059	-0.038	0.000		
Biserial		-0.058	0.358	-0.078	-0.058	0.000		
t test		-0.162	1.229	-0.252	-0.162	0.000		
Prob> t		0.8733	0.2350	0.8036	0.8733	1.0000		
Item	6: * is keyed	1*	2	3	4	5	Omit	Invalid
Q6	Responses	80.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		-0.250	0.000	0.250	0.000	0.000		
Biserial		-0.356	0.000	0.356	0.000	0.000		
Item-Remainder:								
Point Bis		-0.364	0.000	0.364	0.000	0.000		
Biserial		-0.520	0.000	0.520	0.000	0.000		
t test		-1.657	0.000	1.657	0.000	0.000		
Prob> t		0.1148	1.0000	0.1148	1.0000	1.0000		
ITEM macro: BY groups								
Two BY groups								
----- BY=1 -----								
Item	7: * is keyed	1	2*	3	4	5	Omit	Invalid
Q7	Responses	10.0%	50.0%	35.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		-0.209	0.499	-0.224	-0.366	0.000		
Biserial		-0.358	0.625	-0.289	-0.773	0.000		
Item-Remainder:								
Point Bis		-0.167	0.363	-0.114	-0.353	0.000		
Biserial		-0.286	0.455	-0.147	-0.747	0.000		
t test		-0.720	1.655	-0.488	-1.603	0.000		
Prob> t		0.4808	0.1152	0.6314	0.1264	1.0000		
Item	8: * is keyed	1*	2	3	4	5	Omit	Invalid
Q8	Responses	35.0%	45.0%	10.0%	10.0%	0.0%	0.0%	0.0%
	Upper 33%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		0.248	0.015	-0.048	-0.370	0.000		
Biserial		0.319	0.018	-0.083	-0.633	0.000		
Item-Remainder:								
Point Bis		0.097	0.120	-0.011	-0.342	0.000		
Biserial		0.125	0.150	-0.019	-0.584	0.000		
t test		0.414	0.511	-0.047	-1.543	0.000		
Prob> t		0.6839	0.6153	0.9632	0.1402	1.0000		

Item	9: * is keyed	1	2*	3	4	5	Omit	Invalid
Q9	Responses	15.0%	15.0%	30.0%	40.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.007	0.097	0.256	-0.315	0.000
Biserial	0.010	0.148	0.338	-0.400	0.000

Item-Remainder:

Point Bis	0.027	-0.018	0.289	-0.277	0.000
Biserial	0.042	-0.028	0.381	-0.352	0.000
t test	0.115	-0.077	1.283	-1.224	0.000
Prob> t	0.9095	0.9396	0.2159	0.2366	1.0000

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	10: * is keyed	1	2*	3	4	5	Omit	Invalid
Q10	Responses	0.0%	50.0%	15.0%	35.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.048	0.052	-0.089	0.000
Biserial	0.000	0.061	0.079	-0.115	0.000

Item-Remainder:

Point Bis	0.000	-0.112	0.119	0.029	0.000
Biserial	0.000	-0.141	0.182	0.037	0.000
t test	0.000	-0.479	0.508	0.121	0.000
Prob> t	1.0000	0.6380	0.6177	0.9049	1.0000

Item	11: * is keyed	1	2*	3	4	5	Omit	Invalid
Q11	Responses	5.0%	95.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.366	0.366	0.000	0.000	0.000
Biserial	-0.773	0.773	0.000	0.000	0.000

Item-Remainder:

Point Bis	-0.303	0.303	0.000	0.000	0.000
Biserial	-0.639	0.639	0.000	0.000	0.000
t test	-1.347	1.347	0.000	0.000	0.000
Prob> t	0.1948	0.1948	1.0000	1.0000	1.0000

Item	12: * is keyed	1	2	3*	4	5	Omit	Invalid
Q12	Responses	5.0%	5.0%	70.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.299	-0.144	0.200	-0.314	0.000
Biserial	0.632	-0.304	0.264	-0.448	0.000

Item-Remainder:

Point Bis	0.358	-0.094	0.054	-0.205	0.000
Biserial	0.756	-0.199	0.071	-0.293	0.000
t test	1.624	-0.401	0.228	-0.889	0.000
Prob> t	0.1217	0.6931	0.8221	0.3857	1.0000

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	13: * is keyed	1	2	3*	4	5	Omit	Invalid
Q13	Responses	0.0%	30.0%	50.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.011	0.145	-0.193	0.000
Biserial	0.000	0.014	0.182	-0.276	0.000

Item-Remainder:

Point Bis	0.000	0.117	-0.016	-0.114	0.000
Biserial	0.000	0.154	-0.020	-0.163	0.000
t test	0.000	0.500	-0.069	-0.486	0.000
Prob> t	1.0000	0.6228	0.9457	0.6326	1.0000

Item	14: * is keyed	1*	2	3	4	5	Omit	Invalid
Q14	Responses	90.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.424	0.000	-0.424	0.000	0.000
Biserial	0.725	0.000	-0.725	0.000	0.000

Item-Remainder:

Point Bis	0.340	0.000	-0.340	0.000	0.000
Biserial	0.581	0.000	-0.581	0.000	0.000
t test	1.533	0.000	-1.533	0.000	0.000
Prob> t	0.1426	1.0000	0.1426	1.0000	1.0000

Item	15: * is keyed	1*	2	3	4	5	Omit	Invalid
Q15	Responses	60.0%	5.0%	15.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	0.0%	25.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.250	-0.144	0.187	-0.394	0.000
Biserial	0.317	-0.304	0.287	-0.563	0.000

Item-Remainder:

Point Bis	0.095	-0.103	0.276	-0.306	0.000
Biserial	0.120	-0.217	0.422	-0.437	0.000
t test	0.403	-0.437	1.217	-1.365	0.000
Prob> t	0.6916	0.6671	0.2392	0.1892	1.0000

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	16: * is keyed	1	2	3	4*	5	Omit	Invalid
Q16	Responses	0.0%	5.0%	45.0%	50.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.078	-0.212	0.177	0.000
Biserial	0.000	0.164	-0.266	0.222	0.000

Item-Remainder:

Point Bis	0.000	0.116	-0.067	0.016	0.000
Biserial	0.000	0.246	-0.085	0.020	0.000
t test	0.000	0.497	-0.287	0.069	0.000
Prob> t	1.0000	0.6253	0.7777	0.9454	1.0000

Item	17: * is keyed	1	2	3	4*	5	Omit	Invalid
Q17	Responses	0.0%	5.0%	20.0%	75.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%

Item-Total:

		Point Bis	0.000	-0.070	0.048	-0.009	0.000		
		Biserial	0.000	-0.148	0.069	-0.013	0.000		
		Item-Remainder:							
		Point Bis	0.000	-0.015	0.167	-0.147	0.000		
		Biserial	0.000	-0.031	0.239	-0.200	0.000		
		t test	0.000	-0.062	0.719	-0.631	0.000		
		Prob> t	1.0000	0.9512	0.4811	0.5360	1.0000		
Item	18: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q18	Responses	20.0%	20.0%	0.0%	60.0%	0.0%	0.0%	0.0%	
	Upper 33%	25.0%	0.0%	0.0%	75.0%	0.0%	0.0%	0.0%	
	Lower 33%	50.0%	25.0%	0.0%	25.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	-0.153	-0.233	0.000	0.315	0.000		
		Biserial	-0.218	-0.333	0.000	0.400	0.000		
		Item-Remainder:							
		Point Bis	-0.059	-0.142	0.000	0.164	0.000		
		Biserial	-0.084	-0.203	0.000	0.208	0.000		
		t test	-0.249	-0.610	0.000	0.705	0.000		
		Prob> t	0.8062	0.5497	1.0000	0.4897	1.0000		
		ITEM macro: BY groups							
		Two BY groups							
		----- BY=1 -----							
Item	19: * is keyed	1	2	3*	4	5	Omit	Invalid	
Q19	Responses	30.0%	5.0%	60.0%	5.0%	0.0%	0.0%	0.0%	
	Upper 33%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	-0.200	-0.218	0.250	0.078	0.000		
		Biserial	-0.264	-0.460	0.317	0.164	0.000		
		Item-Remainder:							
		Point Bis	-0.076	-0.178	0.095	0.125	0.000		
		Biserial	-0.100	-0.377	0.120	0.265	0.000		
		t test	-0.323	-0.769	0.403	0.536	0.000		
		Prob> t	0.7506	0.4516	0.6916	0.5987	1.0000		
Item	20: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q20	Responses	65.0%	30.0%	0.0%	5.0%	0.0%	0.0%	0.0%	
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	0.224	-0.306	0.000	0.151	0.000		
		Biserial	0.289	-0.403	0.000	0.320	0.000		
		Item-Remainder:							
		Point Bis	0.073	-0.173	0.000	0.204	0.000		
		Biserial	0.093	-0.227	0.000	0.431	0.000		
		t test	0.309	-0.743	0.000	0.885	0.000		
		Prob> t	0.7612	0.4669	1.0000	0.3881	1.0000		
Item	21: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q21	Responses	10.0%	70.0%	5.0%	15.0%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%	
		Item-Total:							
		Point Bis	0.113	0.165	-0.366	-0.083	0.000		
		Biserial	0.193	0.218	-0.773	-0.128	0.000		
		Item-Remainder:							
		Point Bis	0.190	0.018	-0.318	0.011	0.000		
		Biserial	0.325	0.023	-0.672	0.017	0.000		

t test	0.823	0.076	-1.424	0.048	0.000
Prob> t	0.4214	0.9406	0.1715	0.9619	1.0000

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	22: *	* is keyed	1*	2	3	4	5	Omit	Invalid
Q22	Responses		50.0%	5.0%	15.0%	30.0%	0.0%	0.0%	0.0%
	Upper 33%		50.0%	25.0%	0.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%		75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:									
	Point Bis		0.016	0.447	-0.399	0.081	0.000		
	Biserial		0.020	0.944	-0.611	0.106	0.000		
Item-Remainder:									
	Point Bis		-0.143	0.479	-0.328	0.184	0.000		
	Biserial		-0.180	1.012	-0.502	0.243	0.000		
	t test		-0.615	2.314	-1.473	0.795	0.000		
	Prob> t		0.5464	0.0327	0.1580	0.4367	1.0000		
Item	23: *	* is keyed	1	2	3	4*	5	Omit	Invalid
Q23	Responses		0.0%	50.0%	10.0%	40.0%	0.0%	0.0%	0.0%
	Upper 33%		0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%
	Lower 33%		0.0%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:									
	Point Bis		0.000	-0.016	-0.424	0.276	0.000		
	Biserial		0.000	-0.020	-0.725	0.350	0.000		
Item-Remainder:									
	Point Bis		0.000	0.116	-0.393	0.122	0.000		
	Biserial		0.000	0.146	-0.672	0.155	0.000		
	t test		0.000	0.497	-1.815	0.522	0.000		
	Prob> t		1.0000	0.6252	0.0861	0.6079	1.0000		
Item	24: *	* is keyed	1*	2	3	4	5	Omit	Invalid
Q24	Responses		65.0%	15.0%	15.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%		50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:									
	Point Bis		0.292	0.052	-0.444	0.004	0.000		
	Biserial		0.376	0.079	-0.680	0.008	0.000		
Item-Remainder:									
	Point Bis		0.143	0.145	-0.369	0.054	0.000		
	Biserial		0.184	0.221	-0.564	0.113	0.000		
	t test		0.614	0.620	-1.682	0.227	0.000		
	Prob> t		0.5470	0.5430	0.1098	0.8227	1.0000		

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	25: *	* is keyed	1	2*	3	4	5	Omit	Invalid
Q25	Responses		25.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%		0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%		25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:									
	Point Bis		-0.028	0.499	-0.548	0.000	0.000		
	Biserial		-0.038	0.625	-0.747	0.000	0.000		
Item-Remainder:									
	Point Bis		0.070	0.363	-0.490	0.000	0.000		
	Biserial		0.095	0.455	-0.667	0.000	0.000		
	t test		0.297	1.655	-2.382	0.000	0.000		

		Prob> t	0.7695	0.1152	0.0284	1.0000	1.0000		
Item	26: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q26	Responses	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%	
	Upper 33%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	-0.288	0.344	-0.048	0.000	0.000			
	Biserial	-0.393	0.469	-0.061	0.000	0.000			
Item-Remainder:									
	Point Bis	-0.251	0.213	0.034	0.000	0.000			
	Biserial	-0.343	0.290	0.042	0.000	0.000			
	t test	-1.102	0.924	0.142	0.000	0.000			
	Prob> t	0.2849	0.3678	0.8885	1.0000	1.0000			
Item	27: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q27	Responses	10.0%	80.0%	0.0%	10.0%	0.0%	0.0%	0.0%	
	Upper 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	0.059	0.113	0.000	-0.209	0.000			
	Biserial	0.101	0.161	0.000	-0.358	0.000			
Item-Remainder:									
	Point Bis	0.068	0.173	0.000	-0.299	0.000			
	Biserial	0.116	0.247	0.000	-0.510	0.000			
	t test	0.290	0.744	0.000	-1.327	0.000			
	Prob> t	0.7755	0.4662	1.0000	0.2011	1.0000			
ITEM macro: BY groups									
Two BY groups									
----- BY=1 -----									
Item	28: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q28	Responses	90.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%	
	Upper 33%	75.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	
	Lower 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	-0.113	0.000	0.000	0.113	0.000			
	Biserial	-0.193	0.000	0.000	0.193	0.000			
Item-Remainder:									
	Point Bis	-0.206	0.000	0.000	0.206	0.000			
	Biserial	-0.352	0.000	0.000	0.352	0.000			
	t test	-0.894	0.000	0.000	0.894	0.000			
	Prob> t	0.3834	1.0000	1.0000	0.3834	1.0000			
Item	29: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q29	Responses	0.0%	35.0%	0.0%	65.0%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	
Item-Total:									
	Point Bis	0.000	0.518	0.000	-0.518	0.000			
	Biserial	0.000	0.667	0.000	-0.667	0.000			
Item-Remainder:									
	Point Bis	0.000	0.392	0.000	-0.392	0.000			
	Biserial	0.000	0.505	0.000	-0.505	0.000			
	t test	0.000	1.808	0.000	-1.808	0.000			
	Prob> t	1.0000	0.0874	1.0000	0.0874	1.0000			
Item	30: * is keyed	1	2	3*	4	5	Omit	Invalid	
Q30	Responses	0.0%	5.0%	60.0%	35.0%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	

```

Item-Total:
  Point Bis  0.000 -0.144  0.611 -0.562  0.000
  Biserial   0.000 -0.304  0.775 -0.724  0.000

```

```

Item-Remainder:
  Point Bis  0.000 -0.109  0.497 -0.461  0.000
  Biserial   0.000 -0.231  0.630 -0.593  0.000
  t test     0.000 -0.467  2.431 -2.202  0.000
  Prob>|t|   1.0000  0.6464  0.0258  0.0410  1.0000

```

ITEM macro: BY groups
Two BY groups

----- BY=1 -----

Item	31: * is keyed	1	2*	3	4	5	Omit	Invalid
Q31	Responses	0.0%	75.0%	5.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%

```

Item-Total:
  Point Bis  0.000  0.325 -0.144 -0.274  0.000
  Biserial   0.000  0.443 -0.304 -0.391  0.000

```

```

Item-Remainder:
  Point Bis  0.000  0.193 -0.092 -0.159  0.000
  Biserial   0.000  0.263 -0.194 -0.227  0.000
  t test     0.000  0.834 -0.392 -0.682  0.000
  Prob>|t|   1.0000  0.4152  0.6998  0.5040  1.0000

```

Item	32: * is keyed	1	2	3	4*	5	Omit	Invalid
Q32	Responses	45.0%	10.0%	15.0%	25.0%	0.0%	5.0%	0.0%
	Upper 33%	25.0%	0.0%	25.0%	25.0%	0.0%	25.0%	0.0%
	Lower 33%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%

```

Item-Total:
  Point Bis  0.015 -0.317  0.052  0.009  0.000
  Biserial   0.018 -0.541  0.079  0.013  0.000

```

```

Item-Remainder:
  Point Bis  0.087 -0.287  0.085 -0.129  0.000
  Biserial   0.109 -0.491  0.130 -0.176  0.000
  t test     0.369 -1.273  0.362 -0.552  0.000
  Prob>|t|   0.7165  0.2193  0.7218  0.5877  1.0000

```

Item	33: * is keyed	1	2	3*	4	5	Omit	Invalid
Q33	Responses	0.0%	40.0%	30.0%	30.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%

```

Item-Total:
  Point Bis  0.000 -0.217  0.643 -0.411  0.000
  Biserial   0.000 -0.275  0.847 -0.542  0.000

```

```

Item-Remainder:
  Point Bis  0.000 -0.151  0.543 -0.381  0.000
  Biserial   0.000 -0.192  0.716 -0.502  0.000
  t test     0.000 -0.649  2.743 -1.750  0.000
  Prob>|t|   1.0000  0.5243  0.0134  0.0972  1.0000

```

ITEM macro: BY groups
Two BY groups

----- BY=2 (第二分组, 后 12 人) -----

Grade Report

SSN	Score	#Missing	#Invalid	Percent
-----	-------	----------	----------	---------

19	1	0	58%
----	---	---	-----

217289073	20	1	1	61%
	18	0	1	55%
234171262	12	0	0	36%
	12	0	0	36%
059486239	22	0	0	67%
232721382	23	0	0	70%
17638728	20	0	0	61%
	17	0	0	52%
194381114	23	0	0	70%
198424787	22	0	0	67%
190521297	20	0	0	61%

ITEM macro: BY groups
Two BY groups

----- BY=2 -----

Summary of Test Statistics

Number of Items	33
Number of Subjects	12
Mean Score	19.000
Variance of Scores	14.182
Standard Deviation	3.766
Kuder-Richardson 20	0.550
Kuder-Richardson 21	0.392
Standard Error (from KR20)	2.527
Standard Error (from KR21)	2.937
Minimum Score	12
Maximum Score	23
Total Number of Answers	396
Number Missing	2
Number Invalid	2

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 461 items

ITEM macro: BY groups
Two BY groups

----- BY=2 -----

Test Frequency Distribution

Raw Score	Standard Score	Per- Centile	Percent	Freq	Cum Freq	Each X represents 1 score
23	606	91	16.7%	2	12	XX
22	580	75	16.7%	2	10	XX
21	553	66	0.0%	0	8	
20	527	54	25.0%	3	8	XXX
19	500	37	8.3%	1	5	X
18	473	29	8.3%	1	4	X
17	447	20	8.3%	1	3	X
16	420	16	0.0%	0	2	
15	394	16	0.0%	0	2	
14	367	16	0.0%	0	2	
13	341	16	0.0%	0	2	
12	314	8	16.7%	2	2	XX

ITEM macro: BY groups
Two BY groups

----- BY=2 -----								
Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	8.3%	91.7%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.000	0.000	0.000	0.000	0.000		
	Biserial	0.000	0.000	0.000	0.000	0.000		
	Item-Remainder:							
	Point Bis	0.000	0.000	0.076	-0.076	0.000		
	Biserial	0.000	0.000	0.138	-0.138	0.000		
	t test	0.000	0.000	0.242	-0.242	0.000		
	Prob> t	1.0000	1.0000	0.8134	0.8134	1.0000		
Item	2: * is keyed	1	2	3*	4	5	Omit	Invalid
Q2	Responses	0.0%	8.3%	91.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.000	-0.585	0.585	0.000	0.000		
	Biserial	0.000	-1.055	1.055	0.000	0.000		
	Item-Remainder:							
	Point Bis	0.000	-0.531	0.531	0.000	0.000		
	Biserial	0.000	-0.958	0.958	0.000	0.000		
	t test	0.000	-1.984	1.984	0.000	0.000		
	Prob> t	1.0000	0.0753	0.0753	1.0000	1.0000		
Item	3: * is keyed	1	2	3*	4	5	Omit	Invalid
Q3	Responses	16.7%	16.7%	66.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.868	-0.124	0.784	0.000	0.000		
	Biserial	-1.295	-0.185	1.017	0.000	0.000		
	Item-Remainder:							
	Point Bis	-0.872	-0.046	0.725	0.000	0.000		
	Biserial	-1.300	-0.068	0.941	0.000	0.000		
	t test	-5.627	-0.145	3.333	0.000	0.000		
	Prob> t	0.0002	0.8874	0.0076	1.0000	1.0000		
ITEM macro: BY groups								
Two BY groups								
----- BY=2 -----								
Item	4: * is keyed	1	2	3*	4	5	Omit	Invalid
Q4	Responses	41.7%	8.3%	25.0%	25.0%	0.0%	0.0%	0.0%
	Upper 33%	25.0%	0.0%	25.0%	50.0%	0.0%	0.0%	0.0%
	Lower 33%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.281	0.084	-0.107	0.374	0.000		
	Biserial	-0.355	0.151	-0.145	0.509	0.000		
	Item-Remainder:							
	Point Bis	-0.218	0.102	-0.222	0.406	0.000		
	Biserial	-0.276	0.185	-0.303	0.553	0.000		
	t test	-0.708	0.326	-0.721	1.403	0.000		
	Prob> t	0.4954	0.7513	0.4871	0.1908	1.0000		
Item	5: * is keyed	1	2*	3	4	5	Omit	Invalid
Q5	Responses	8.3%	33.3%	16.7%	41.7%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	0.0%	50.0%	25.0%	0.0%	0.0%	0.0%

	Item-Total:							
	Point Bis	-0.585	0.441	-0.186	0.047	0.000		
	Biserial	-1.055	0.572	-0.278	0.059	0.000		
	Item-Remainder:							
	Point Bis	-0.587	0.327	-0.152	0.132	0.000		
	Biserial	-1.058	0.424	-0.227	0.166	0.000		
	t test	-2.293	1.094	-0.488	0.420	0.000		
	Prob> t	0.0448	0.2995	0.6363	0.6834	1.0000		
Item Q6	6: * is keyed	1*	2	3	4	5	Omit	Invalid
	Responses	41.7%	0.0%	16.7%	25.0%	0.0%	0.0%	16.7%
	Upper 33%	25.0%	0.0%	25.0%	50.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	0.0%	25.0%	0.0%	0.0%	0.0%	25.0%
	Item-Total:							
	Point Bis	-0.469	0.000	0.124	0.427	0.000		
	Biserial	-0.592	0.000	0.185	0.582	0.000		
	Item-Remainder:							
	Point Bis	-0.565	0.000	0.164	0.461	0.000		
	Biserial	-0.714	0.000	0.245	0.628	0.000		
	t test	-2.168	0.000	0.526	1.643	0.000		
	Prob> t	0.0554	1.0000	0.6104	0.1314	1.0000		
	ITEM macro: BY groups							
	Two BY groups							
	----- BY=2 -----							
Item Q7	7: * is keyed	1	2*	3	4	5	Omit	Invalid
	Responses	25.0%	58.3%	16.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.000	-0.141	0.186	0.000	0.000		
	Biserial	0.000	-0.178	0.278	0.000	0.000		
	Item-Remainder:							
	Point Bis	0.091	-0.270	0.251	0.000	0.000		
	Biserial	0.124	-0.341	0.375	0.000	0.000		
	t test	0.288	-0.886	0.821	0.000	0.000		
	Prob> t	0.7789	0.3964	0.4307	1.0000	1.0000		
Item Q8	8: * is keyed	1*	2	3	4	5	Omit	Invalid
	Responses	33.3%	50.0%	8.3%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.392	-0.416	0.084	0.000	0.000		
	Biserial	0.509	-0.521	0.151	0.000	0.000		
	Item-Remainder:							
	Point Bis	0.273	-0.338	0.117	0.029	0.000		
	Biserial	0.355	-0.424	0.210	0.053	0.000		
	t test	0.899	-1.137	0.371	0.092	0.000		
	Prob> t	0.3898	0.2820	0.7182	0.9283	1.0000		
Item Q9	9: * is keyed	1	2*	3	4	5	Omit	Invalid
	Responses	0.0%	50.0%	41.7%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.000	0.508	-0.563	0.084	0.000		
	Biserial	0.000	0.637	-0.711	0.151	0.000		
	Item-Remainder:							

Point Bis	0.000	0.395	-0.475	0.134	0.000
Biserial	0.000	0.495	-0.600	0.241	0.000
t test	0.000	1.358	-1.708	0.427	0.000
Prob> t	1.0000	0.2043	0.1184	0.6783	1.0000

ITEM macro: BY groups
Two BY groups

		BY=2						
Item		1	2*	3	4	5	Omit	Invalid
Q10	10: * is keyed							
	Responses	0.0%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.637	0.000	-0.637	0.000
Biserial	0.000	0.826	0.000	-0.826	0.000

Item-Remainder:

Point Bis	0.000	0.549	0.000	-0.549	0.000
Biserial	0.000	0.712	0.000	-0.712	0.000
t test	0.000	2.079	0.000	-2.079	0.000
Prob> t	1.0000	0.0643	1.0000	0.0643	1.0000

Item		1	2*	3	4	5	Omit	Invalid
Q11	11: * is keyed							
	Responses	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	0.000	0.000	0.000
Biserial	0.000	0.000	0.000	0.000	0.000

Item-Remainder:

Point Bis	0.000	0.000	0.000	0.000	0.000
Biserial	0.000	0.000	0.000	0.000	0.000
t test	0.000	0.000	0.000	0.000	0.000
Prob> t	1.0000	1.0000	1.0000	1.0000	1.0000

Item		1	2	3*	4	5	Omit	Invalid
Q12	12: * is keyed							
	Responses	0.0%	0.0%	91.7%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	-0.084	0.084	0.000
Biserial	0.000	0.000	-0.151	0.151	0.000

Item-Remainder:

Point Bis	0.000	0.000	-0.159	0.159	0.000
Biserial	0.000	0.000	-0.286	0.286	0.000
t test	0.000	0.000	-0.509	0.509	0.000
Prob> t	1.0000	1.0000	0.6220	0.6220	1.0000

ITEM macro: BY groups
Two BY groups

		BY=2						
Item		1	2	3*	4	5	Omit	Invalid
Q13	13: * is keyed							
	Responses	8.3%	16.7%	66.7%	0.0%	0.0%	8.3%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.585	-0.372	0.588	0.000	0.000
Biserial	-1.055	-0.555	0.763	0.000	0.000

Item-Remainder:

Point Bis	-0.570	-0.311	0.493	0.000	0.000
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		Biserial	-1.028	-0.465	0.639	0.000	0.000		
		t test	-2.194	-1.037	1.790	0.000	0.000		
		Prob> t	0.0530	0.3243	0.1038	1.0000	1.0000		
Item	14: *	is keyed	1*	2	3	4	5	Omit	Invalid
Q14		Responses	83.3%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%
		Upper 33%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	-0.248	0.000	0.248	0.000	0.000		
		Biserial	-0.370	0.000	0.370	0.000	0.000		
		Item-Remainder:							
		Point Bis	-0.341	0.000	0.341	0.000	0.000		
		Biserial	-0.509	0.000	0.509	0.000	0.000		
		t test	-1.147	0.000	1.147	0.000	0.000		
		Prob> t	0.2780	1.0000	0.2780	1.0000	1.0000		
Item	15: *	is keyed	1*	2	3	4	5	Omit	Invalid
Q15		Responses	25.0%	8.3%	50.0%	16.7%	0.0%	0.0%	0.0%
		Upper 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%
		Lower 33%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	0.000	0.000	-0.231	0.310	0.000		
		Biserial	0.000	0.000	-0.290	0.463	0.000		
		Item-Remainder:							
		Point Bis	-0.119	0.021	-0.161	0.339	0.000		
		Biserial	-0.162	0.037	-0.201	0.505	0.000		
		t test	-0.380	0.066	-0.515	1.138	0.000		
		Prob> t	0.7121	0.9489	0.6180	0.2816	1.0000		
ITEM macro: BY groups									
Two BY groups									
----- BY=2 -----									
Item	16: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q16		Responses	0.0%	0.0%	33.3%	58.3%	0.0%	8.3%	0.0%
		Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
		Lower 33%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	0.000	0.000	-0.294	0.281	0.000		
		Biserial	0.000	0.000	-0.381	0.355	0.000		
		Item-Remainder:							
		Point Bis	0.000	0.000	-0.185	0.149	0.000		
		Biserial	0.000	0.000	-0.240	0.188	0.000		
		t test	0.000	0.000	-0.596	0.476	0.000		
		Prob> t	1.0000	1.0000	0.5643	0.6441	1.0000		
Item	17: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q17		Responses	0.0%	8.3%	41.7%	50.0%	0.0%	0.0%	0.0%
		Upper 33%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%
		Lower 33%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%
		Item-Total:							
		Point Bis	0.000	0.084	0.047	-0.092	0.000		
		Biserial	0.000	0.151	0.059	-0.116	0.000		
		Item-Remainder:							
		Point Bis	0.000	0.123	0.161	-0.226	0.000		
		Biserial	0.000	0.221	0.203	-0.283	0.000		
		t test	0.000	0.391	0.514	-0.734	0.000		
		Prob> t	1.0000	0.7040	0.6182	0.4798	1.0000		
Item	18: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q18		Responses	16.7%	0.0%	0.0%	83.3%	0.0%	0.0%	0.0%

Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Lower 33%	25.0%	0.0%	0.0%	75.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.372	0.000	0.000	0.372	0.000
Biserial	-0.555	0.000	0.000	0.555	0.000

Item-Remainder:

Point Bis	-0.278	0.000	0.000	0.278	0.000
Biserial	-0.415	0.000	0.000	0.415	0.000
t test	-0.916	0.000	0.000	0.916	0.000
Prob> t	0.3814	1.0000	1.0000	0.3814	1.0000

ITEM macro: BY groups
Two BY groups

----- BY=2 -----

Item 19: * is keyed	1	2	3*	4	5	Omit	Invalid
Q19 Responses	41.7%	16.7%	41.7%	0.0%	0.0%	0.0%	0.0%
Upper 33%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%
Lower 33%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.188	-0.496	0.188	0.000	0.000
Biserial	0.237	-0.740	0.237	0.000	0.000

Item-Remainder:

Point Bis	0.290	-0.452	0.052	0.000	0.000
Biserial	0.366	-0.674	0.065	0.000	0.000
t test	0.958	-1.602	0.164	0.000	0.000
Prob> t	0.3606	0.1403	0.8734	1.0000	1.0000

Item 20: * is keyed	1*	2	3	4	5	Omit	Invalid
Q20 Responses	83.3%	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%
Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower 33%	75.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.372	0.000	0.000	-0.372	0.000
Biserial	0.555	0.000	0.000	-0.555	0.000

Item-Remainder:

Point Bis	0.278	0.000	0.000	-0.278	0.000
Biserial	0.415	0.000	0.000	-0.415	0.000
t test	0.916	0.000	0.000	-0.916	0.000
Prob> t	0.3814	1.0000	1.0000	0.3814	1.0000

Item 21: * is keyed	1	2*	3	4	5	Omit	Invalid
Q21 Responses	16.7%	83.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.372	0.372	0.000	0.000	0.000
Biserial	-0.555	0.555	0.000	0.000	0.000

Item-Remainder:

Point Bis	-0.278	0.278	0.000	0.000	0.000
Biserial	-0.415	0.415	0.000	0.000	0.000
t test	-0.916	0.916	0.000	0.000	0.000
Prob> t	0.3814	0.3814	1.0000	1.0000	1.0000

ITEM macro: BY groups
Two BY groups

----- BY=2 -----

Item 22: * is keyed	1*	2	3	4	5	Omit	Invalid
Q22 Responses	33.3%	0.0%	41.7%	25.0%	0.0%	0.0%	0.0%
Upper 33%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%	0.0%

		Lower 33%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%
	Item-Total:								
		Point Bis	0.245	0.000	0.141	-0.427	0.000		
		Biserial	0.318	0.000	0.178	-0.582	0.000		
	Item-Remainder:								
		Point Bis	0.117	0.000	0.224	-0.383	0.000		
		Biserial	0.152	0.000	0.283	-0.522	0.000		
		t test	0.373	0.000	0.727	-1.310	0.000		
		Prob> t	0.7168	1.0000	0.4838	0.2195	1.0000		
Item	23: * is keyed	1	2	3	4*	5	Omit	Invalid	
Q23	Responses	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	
	Item-Total:								
		Point Bis	0.000	-0.046	0.000	0.046	0.000		
		Biserial	0.000	-0.058	0.000	0.058	0.000		
	Item-Remainder:								
		Point Bis	0.000	0.092	0.000	-0.092	0.000		
		Biserial	0.000	0.115	0.000	-0.115	0.000		
		t test	0.000	0.293	0.000	-0.293	0.000		
		Prob> t	1.0000	0.7758	1.0000	0.7758	1.0000		
Item	24: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q24	Responses	58.3%	16.7%	16.7%	8.3%	0.0%	0.0%	0.0%	
	Upper 33%	75.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	
	Lower 33%	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%	
	Item-Total:								
		Point Bis	0.281	-0.062	-0.496	0.251	0.000		
		Biserial	0.355	-0.093	-0.740	0.452	0.000		
	Item-Remainder:								
		Point Bis	0.149	0.011	-0.437	0.309	0.000		
		Biserial	0.188	0.016	-0.651	0.557	0.000		
		t test	0.476	0.034	-1.535	1.027	0.000		
		Prob> t	0.6441	0.9738	0.1558	0.3288	1.0000		
ITEM macro: BY groups									
Two BY groups									
----- BY=2 -----									
Item	25: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q25	Responses	16.7%	58.3%	8.3%	16.7%	0.0%	0.0%	0.0%	
	Upper 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	25.0%	25.0%	25.0%	25.0%	0.0%	0.0%	0.0%	
	Item-Total:								
		Point Bis	-0.248	0.563	-0.585	-0.062	0.000		
		Biserial	-0.370	0.711	-1.055	-0.093	0.000		
	Item-Remainder:								
		Point Bis	-0.189	0.458	-0.577	0.011	0.000		
		Biserial	-0.282	0.579	-1.040	0.017	0.000		
		t test	-0.608	1.629	-2.234	0.035	0.000		
		Prob> t	0.5564	0.1344	0.0495	0.9727	1.0000		
Item	26: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q26	Responses	8.3%	50.0%	41.7%	0.0%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%	
	Item-Total:								
		Point Bis	-0.585	0.462	-0.141	0.000	0.000		
		Biserial	-1.055	0.579	-0.178	0.000	0.000		

Item-Remainder:								
	Point Bis	-0.576	0.343	-0.025	0.000	0.000		
	Biserial	-1.038	0.430	-0.031	0.000	0.000		
	t test	-2.227	1.154	-0.079	0.000	0.000		
	Prob> t	0.0501	0.2754	0.9389	1.0000	1.0000		
Item	27: * is keyed	1	2	3	4*	5	Omit	Invalid
Q27	Responses	0.0%	91.7%	0.0%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	-0.334	0.000	0.334	0.000		
	Biserial	0.000	-0.603	0.000	0.603	0.000		
Item-Remainder:								
	Point Bis	0.000	-0.264	0.000	0.264	0.000		
	Biserial	0.000	-0.476	0.000	0.476	0.000		
	t test	0.000	-0.865	0.000	0.865	0.000		
	Prob> t	1.0000	0.4072	1.0000	0.4072	1.0000		
ITEM macro: BY groups								
Two BY groups								
----- BY=2 -----								
Item	28: * is keyed	1*	2	3	4	5	Omit	Invalid
Q28	Responses	83.3%	0.0%	8.3%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	0.0%	25.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.186	0.000	-0.167	-0.084	0.000		
	Biserial	0.278	0.000	-0.302	-0.151	0.000		
Item-Remainder:								
	Point Bis	0.084	0.000	-0.099	-0.014	0.000		
	Biserial	0.125	0.000	-0.178	-0.025	0.000		
	t test	0.266	0.000	-0.314	-0.045	0.000		
	Prob> t	0.7955	1.0000	0.7597	0.9652	1.0000		
Item	29: * is keyed	1	2*	3	4	5	Omit	Invalid
Q29	Responses	25.0%	25.0%	0.0%	50.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	25.0%	0.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.107	-0.053	0.000	0.139	0.000		
	Biserial	-0.145	-0.073	0.000	0.174	0.000		
Item-Remainder:								
	Point Bis	-0.066	-0.171	0.000	0.205	0.000		
	Biserial	-0.090	-0.233	0.000	0.257	0.000		
	t test	-0.209	-0.549	0.000	0.663	0.000		
	Prob> t	0.8389	0.5948	1.0000	0.5222	1.0000		
Item	30: * is keyed	1	2	3*	4	5	Omit	Invalid
Q30	Responses	0.0%	0.0%	91.7%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.000	0.585	-0.585	0.000		
	Biserial	0.000	0.000	1.055	-1.055	0.000		
Item-Remainder:								
	Point Bis	0.000	0.000	0.531	-0.531	0.000		
	Biserial	0.000	0.000	0.958	-0.958	0.000		
	t test	0.000	0.000	1.984	-1.984	0.000		
	Prob> t	1.0000	1.0000	0.0753	0.0753	1.0000		

ITEM macro: BY groups								
Two BY groups								
----- BY=2 -----								
Item 31: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q31	Responses	8.3%	50.0%	0.0%	41.7%	0.0%	0.0%	0.0%
	Upper 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.334	0.555	0.000	-0.750	0.000		
	Biserial	0.603	0.695	0.000	-0.948	0.000		
Item-Remainder:								
	Point Bis	0.405	0.447	0.000	-0.680	0.000		
	Biserial	0.729	0.560	0.000	-0.860	0.000		
	t test	1.399	1.581	0.000	-2.935	0.000		
	Prob> t	0.1921	0.1449	1.0000	0.0149	1.0000		
Item 32: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q32	Responses	33.3%	41.7%	8.3%	16.7%	0.0%	0.0%	0.0%
	Upper 33%	25.0%	50.0%	0.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.294	-0.047	-0.585	0.124	0.000		
	Biserial	0.381	-0.059	-1.055	0.185	0.000		
Item-Remainder:								
	Point Bis	0.329	-0.008	-0.576	0.021	0.000		
	Biserial	0.427	-0.010	-1.038	0.031	0.000		
	t test	1.103	-0.025	-2.227	0.066	0.000		
	Prob> t	0.2959	0.9806	0.0501	0.9488	1.0000		
Item 33: *	is keyed	1	2	3*	4	5	Omit	Invalid
Q33	Responses	8.3%	16.7%	50.0%	25.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	25.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.084	-0.434	0.601	-0.267	0.000		
	Biserial	-0.151	-0.648	0.753	-0.364	0.000		
Item-Remainder:								
	Point Bis	-0.045	-0.403	0.501	-0.202	0.000		
	Biserial	-0.082	-0.601	0.627	-0.276	0.000		
	t test	-0.143	-1.392	1.829	-0.653	0.000		
	Prob> t	0.8889	0.1940	0.0974	0.5283	1.0000		

ITEM macro: Subtests and BY groups

----- BY=1 (第一分组, 前 20 人) -----

English Final(总测验)

Grade Report(结果与第七部分相同)

SSN	Score	#Missing	#Invalid	Percent
200465598	19	0	0	58%
233868923	14	0	0	42%
	20	0	0	61%
236909800	17	0	0	52%
235884995	16	0	0	48%
270606129	17	0	0	52%
188447596	23	0	0	70%
054389259	19	0	0	58%
130463838	18	0	0	55%
165463286	16	0	0	48%
217669611	13	1	0	39%
	22	1	0	67%

228761635	15	0	0	45%
236869018	16	0	0	48%
206422209	21	0	0	64%
081481581	24	0	0	73%
236562064	13	0	0	39%
296549834	16	0	0	48%
234908052	20	0	0	61%
407681435	20	0	0	61%

ITEM macro: Subtests and BY groups

----- BY=1 -----

English Final(总测验)

Summary of Test Statistics(结果与第七部分相同)

Number of Items	33
Number of Subjects	20
Mean Score	17.950
Variance of Scores	10.155
Standard Deviation	3.187
Kuder-Richardson 20	0.361
Kuder-Richardson 21	0.156
Standard Error (from KR20)	2.548
Standard Error (from KR21)	2.927
Minimum Score	13
Maximum Score	24
Total Number of Answers	660
Number Missing	2
Number Invalid	0

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 1605 items

ITEM macro: Subtests and BY groups

----- BY=1 -----

English Final(总测验)

Test Frequency Distribution(结果与第七部分相同)

Raw Score	Standard Score	Per- Centile	Percent	Freq	Cum Freq	Each X represents 1 score
24	690	97	5.0%	1	20	X
23	658	92	5.0%	1	19	X
22	627	87	5.0%	1	18	X
21	596	82	5.0%	1	17	X
20	564	72	15.0%	3	16	XXX
19	533	60	10.0%	2	13	XX
18	502	52	5.0%	1	11	X
17	470	45	10.0%	2	10	XX
16	439	30	20.0%	4	8	XXXX
15	407	17	5.0%	1	4	X
14	376	12	5.0%	1	3	X
13	345	5	10.0%	2	2	XX

ITEM macro: Subtests and BY groups

----- BY=1 -----

English Final(总测验)								
Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.000	0.000	0.000	0.000		
	Biserial	0.000	0.000	0.000	0.000	0.000		
Item-Remainder:								
	Point Bis	0.000	0.000	0.000	0.000	0.000		
	Biserial	0.000	0.000	0.000	0.000	0.000		
	t test	0.000	0.000	0.000	0.000	0.000		
	Prob> t	1.0000	1.0000	1.0000	1.0000	1.0000		
(其余 32 题的分析省略)								

ITEM macro: Subtests and BY groups

----- BY=1 (第一分组, 前 20 人) -----

Spelling Proficiency(拼音子测验)

Grade Report

SSN	Score	#Missing	#Invalid	Percent
200465598	3	0	0	30%
233868923	4	0	0	40%
	5	0	0	50%
236909800	5	0	0	50%
235884995	2	0	0	20%
270606129	6	0	0	60%
188447596	6	0	0	60%
054389259	6	0	0	60%
130463838	5	0	0	50%
165463286	5	0	0	50%
217669611	5	1	0	50%
	6	0	0	60%
228761635	4	0	0	40%
236869018	4	0	0	40%
206422209	4	0	0	40%
081481581	6	0	0	60%
236562064	5	0	0	50%
296549834	5	0	0	50%
234908052	6	0	0	60%
407681435	7	0	0	70%

ITEM macro: Subtests and BY groups

----- BY=1 -----

Spelling Proficiency

Summary of Test Statistics

Number of Items	10
Number of Subjects	20
Mean Score	4.950
Variance of Scores	1.418
Standard Deviation	1.191
Kuder-Richardson 20	-0.284
Kuder-Richardson 21	-0.950
Standard Error (from KR20)	1.350

Standard Error (from KR21) 1.663

Minimum Score 2

Maximum Score 7

Total Number of Answers 200

Number Missing 1

Number Invalid 0

ITEM macro: Subtests and BY groups

----- BY=1 -----

Spelling Proficiency

Test Frequency Distribution

Raw Score	Standard Score	Per- Centile	Percent	Freq	Cum Freq	Each X represents 1 score
7	672	97	5.0%	1	20	X
6	588	80	30.0%	6	19	XXXXXX
5	504	47	35.0%	7	13	XXXXXXXX
4	420	20	20.0%	4	6	XXXX
3	336	7	5.0%	1	2	X
2	252	2	5.0%	1	1	X

ITEM macro: Subtests and BY groups

----- BY=1 -----

Spelling Proficiency

Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.000	0.000	0.000	0.000		
	Biserial	0.000	0.000	0.000	0.000	0.000		
Item-Remainder:								
	Point Bis	0.000	0.000	0.000	0.000	0.000		
	Biserial	0.000	0.000	0.000	0.000	0.000		
	t test	0.000	0.000	0.000	0.000	0.000		
	Prob> t	1.0000	1.0000	1.0000	1.0000	1.0000		
Item	2: * is keyed	1	2	3*	4	5	Omit	Invalid
Q2	Responses	10.0%	15.0%	70.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	16.7%	16.7%	50.0%	16.7%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.129	-0.223	0.348	-0.188	0.000		
	Biserial	-0.221	-0.342	0.458	-0.397	0.000		
Item-Remainder:								
	Point Bis	0.076	0.032	-0.050	-0.053	0.000		
	Biserial	0.131	0.049	-0.066	-0.111	0.000		
	t test	0.325	0.136	-0.213	-0.224	0.000		
	Prob> t	0.7486	0.8930	0.8340	0.8256	1.0000		
Item	3: * is keyed	1	2	3*	4	5	Omit	Invalid
Q3	Responses	15.0%	5.0%	60.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	0.0%	50.0%	16.7%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.464	0.010	0.317	0.022	0.000		
	Biserial	-0.711	0.021	0.401	0.031	0.000		

Item-Remainder:

Point Bis	-0.259	0.135	-0.111	0.293	0.000
Biserial	-0.397	0.284	-0.140	0.419	0.000
t test	-1.138	0.576	-0.472	1.302	0.000
Prob> t	0.2700	0.5716	0.6427	0.2094	1.0000

ITEM macro: Subtests and BY groups

----- BY=1 -----

Spelling Proficiency

Item	4: * is keyed	1	2	3*	4	5	Omit	Invalid
Q4	Responses	55.0%	5.0%	0.0%	40.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	66.7%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.299	0.010	0.000	0.299	0.000
Biserial	-0.375	0.021	0.000	0.379	0.000

Item-Remainder:

Point Bis	-0.299	0.010	0.000	0.299	0.000
Biserial	-0.375	0.021	0.000	0.379	0.000
t test	-1.328	0.042	0.000	1.329	0.000
Prob> t	0.2008	0.9670	1.0000	0.2004	1.0000

Item	5: * is keyed	1	2*	3	4	5	Omit	Invalid
Q5	Responses	15.0%	35.0%	30.0%	15.0%	0.0%	5.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	0.0%	66.7%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.585	0.573	-0.348	0.259	0.000
Biserial	-0.896	0.738	-0.458	0.397	0.000

Item-Remainder:

Point Bis	-0.549	0.195	-0.180	0.462	0.000
Biserial	-0.841	0.251	-0.237	0.708	0.000
t test	-2.785	0.842	-0.777	2.211	0.000
Prob> t	0.0122	0.4109	0.4475	0.0402	1.0000

Item	6: * is keyed	1*	2	3	4	5	Omit	Invalid
Q6	Responses	80.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	83.3%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.086	0.000	-0.086	0.000	0.000
Biserial	0.123	0.000	-0.123	0.000	0.000

Item-Remainder:

Point Bis	-0.251	0.000	0.251	0.000	0.000
Biserial	-0.359	0.000	0.359	0.000	0.000
t test	-1.101	0.000	1.101	0.000	0.000
Prob> t	0.2856	1.0000	0.2856	1.0000	1.0000

ITEM macro: Subtests and BY groups

----- BY=1 -----

Spelling Proficiency

Item	7: * is keyed	1	2*	3	4	5	Omit	Invalid
Q7	Responses	10.0%	50.0%	35.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	16.7%	16.7%	66.7%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.129	0.560	-0.510	0.010	0.000
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Biserial -0.221 0.702 -0.657 0.021 0.000

Item-Remainder:

Point Bis 0.017 0.154 -0.232 0.130 0.000
Biserial 0.029 0.193 -0.298 0.274 0.000
t test 0.073 0.662 -1.010 0.555 0.000
Prob>|t| 0.9429 0.5165 0.3260 0.5860 1.0000

Item	8: * is keyed	1*	2	3	4	5	Omit	Invalid
Q8	Responses	35.0%	45.0%	10.0%	10.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	16.7%	66.7%	0.0%	16.7%	0.0%	0.0%	0.0%

Item-Total:

Point Bis 0.212 0.039 0.014 -0.416 0.000
Biserial 0.273 0.049 0.025 -0.712 0.000

Item-Remainder:

Point Bis -0.199 0.313 0.115 -0.317 0.000
Biserial -0.257 0.393 0.197 -0.541 0.000
t test -0.863 1.396 0.492 -1.417 0.000
Prob>|t| 0.3997 0.1797 0.6287 0.1736 1.0000

Item	9: * is keyed	1	2*	3	4	5	Omit	Invalid
Q9	Responses	15.0%	15.0%	30.0%	40.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	16.7%	16.7%	33.3%	33.3%	0.0%	0.0%	0.0%

Item-Total:

Point Bis -0.103 0.139 -0.066 0.035 0.000
Biserial -0.157 0.212 -0.087 0.045 0.000

Item-Remainder:

Point Bis -0.048 -0.168 0.019 0.140 0.000
Biserial -0.074 -0.257 0.025 0.178 0.000
t test -0.204 -0.723 0.079 0.600 0.000
Prob>|t| 0.8406 0.4787 0.9376 0.5560 1.0000

ITEM macro: Subtests and BY groups

----- BY=1 -----

Spelling Proficiency

Item	10: * is keyed	1	2*	3	4	5	Omit	Invalid
Q10	Responses	0.0%	50.0%	15.0%	35.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	16.7%	33.3%	50.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis 0.000 0.215 -0.344 0.032 0.000
Biserial 0.000 0.270 -0.527 0.041 0.000

Item-Remainder:

Point Bis 0.000 -0.215 -0.163 0.348 0.000
Biserial 0.000 -0.270 -0.249 0.448 0.000
t test 0.000 -0.936 -0.700 1.573 0.000
Prob>|t| 1.0000 0.3618 0.4927 0.1331 1.0000

ITEM macro: Subtests and BY groups

----- BY=1 (第一分组, 前 20 人) -----

Grammar Proficiency(文法子测验)

Grade Report

SSN	Score	#Missing	#Invalid	Percent
200465598	16	0	0	70%
233868923	10	0	0	43%

	15	0	0	65%
236909800	12	0	0	52%
235884995	14	0	0	61%
270606129	11	0	0	48%
188447596	17	0	0	74%
054389259	13	0	0	57%
130463838	13	0	0	57%
165463286	11	0	0	48%
217669611	8	0	0	35%
	16	1	0	70%
228761635	11	0	0	48%
236869018	12	0	0	52%
206422209	17	0	0	74%
081481581	18	0	0	78%
236562064	8	0	0	35%
296549834	11	0	0	48%
234908052	14	0	0	61%
407681435	13	0	0	57%

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency

Summary of Test Statistics

Number of Items	23
Number of Subjects	20
Mean Score	13.000
Variance of Scores	8.316
Standard Deviation	2.884
Kuder-Richardson 20	0.439
Kuder-Richardson 21	0.297
Standard Error (from KR20)	2.159
Standard Error (from KR21)	2.417
Minimum Score	8
Maximum Score	18
Total Number of Answers	460
Number Missing	1
Number Invalid	0

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 489 items

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency

Test Frequency Distribution

Raw Score	Standard Score	Per- Centile	Percent	Freq	Cum Freq	Each X represents 1 score
18	673	97	5.0%	1	20	X
17	639	90	10.0%	2	19	XX
16	604	80	10.0%	2	17	XX
15	569	72	5.0%	1	15	X
14	535	65	10.0%	2	14	XX
13	500	52	15.0%	3	12	XXX
12	465	40	10.0%	2	9	XX
11	431	25	20.0%	4	7	XXXX

10	396	12	5.0%	1	3	X
9	361	10	0.0%	0	2	
8	327	5	10.0%	2	2	XX

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency

Item	11: * is keyed	1	2*	3	4	5	Omit	Invalid
Q11	Responses	5.0%	95.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	66.7%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.408	0.408	0.000	0.000	0.000
Biserial	-0.862	0.862	0.000	0.000	0.000

Item-Remainder:

Point Bis	-0.340	0.340	0.000	0.000	0.000
Biserial	-0.719	0.719	0.000	0.000	0.000
t test	-1.536	1.536	0.000	0.000	0.000
Prob> t	0.1419	0.1419	1.0000	1.0000	1.0000

Item	12: * is keyed	1	2	3*	4	5	Omit	Invalid
Q12	Responses	5.0%	5.0%	70.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	16.7%	0.0%	66.7%	16.7%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.245	-0.163	0.272	-0.356	0.000
Biserial	0.517	-0.345	0.358	-0.508	0.000

Item-Remainder:

Point Bis	0.312	-0.110	0.112	-0.239	0.000
Biserial	0.659	-0.232	0.148	-0.341	0.000
t test	1.392	-0.468	0.479	-1.043	0.000
Prob> t	0.1808	0.6457	0.6376	0.3106	1.0000

Item	13: * is keyed	1	2	3*	4	5	Omit	Invalid
Q13	Responses	0.0%	30.0%	50.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	16.7%	66.7%	16.7%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	33.3%	33.3%	33.3%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	-0.194	0.213	-0.044	0.000
Biserial	0.000	-0.256	0.268	-0.064	0.000

Item-Remainder:

Point Bis	0.000	-0.079	0.036	0.045	0.000
Biserial	0.000	-0.105	0.046	0.065	0.000
t test	0.000	-0.338	0.155	0.193	0.000
Prob> t	1.0000	0.7393	0.8789	0.8490	1.0000

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency

Item	14: * is keyed	1*	2	3	4	5	Omit	Invalid
Q14	Responses	90.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.415	0.000	-0.415	0.000	0.000
Biserial	0.710	0.000	-0.710	0.000	0.000

Item-Remainder:								
Point Bis		0.321	0.000	-0.321	0.000	0.000		
Biserial		0.549	0.000	-0.549	0.000	0.000		
t test		1.438	0.000	-1.438	0.000	0.000		
Prob> t		0.1676	1.0000	0.1676	1.0000	1.0000		
Item	15: * is keyed	1*	2	3	4	5	Omit	Invalid
Q15	Responses	60.0%	5.0%	15.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	66.7%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		0.290	-0.082	0.199	-0.489	0.000		
Biserial		0.368	-0.172	0.305	-0.699	0.000		
Item-Remainder:								
Point Bis		0.121	-0.034	0.300	-0.397	0.000		
Biserial		0.153	-0.072	0.459	-0.567	0.000		
t test		0.515	-0.144	1.333	-1.834	0.000		
Prob> t		0.6127	0.8873	0.1991	0.0832	1.0000		
Item	16: * is keyed	1	2	3	4*	5	Omit	Invalid
Q16	Responses	0.0%	5.0%	45.0%	50.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	16.7%	16.7%	66.7%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	66.7%	33.3%	0.0%	0.0%	0.0%
Item-Total:								
Point Bis		0.000	0.245	-0.358	0.249	0.000		
Biserial		0.000	0.517	-0.449	0.312	0.000		
Item-Remainder:								
Point Bis		0.000	0.294	-0.203	0.073	0.000		
Biserial		0.000	0.622	-0.255	0.092	0.000		
t test		0.000	1.306	-0.877	0.312	0.000		
Prob> t		1.0000	0.2080	0.3918	0.7588	1.0000		

ITEM macro: Subtests and BY groups

BY=1

Grammar Proficiency

Item 17:	* is keyed	1	2	3	4*	5	Omit	Invalid
Q17	Responses	0.0%	5.0%	20.0%	75.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	-0.082	0.044	0.000	0.000		
	Biserial	0.000	-0.172	0.064	0.000	0.000		
Item-Remainder:								
	Point Bis	0.000	-0.020	0.176	-0.152	0.000		
	Biserial	0.000	-0.043	0.251	-0.207	0.000		
	t test	0.000	-0.086	0.758	-0.654	0.000		
	Prob> t	1.0000	0.9327	0.4584	0.5216	1.0000		
Item 18:	* is keyed	1	2	3	4*	5	Omit	Invalid
Q18	Responses	20.0%	20.0%	0.0%	60.0%	0.0%	0.0%	0.0%
	Upper 33%	16.7%	0.0%	0.0%	83.3%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	33.3%	0.0%	33.3%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.133	-0.222	0.000	0.290	0.000		
	Biserial	-0.191	-0.318	0.000	0.368	0.000		
Item-Remainder:								
	Point Bis	-0.028	-0.120	0.000	0.121	0.000		
	Biserial	-0.040	-0.171	0.000	0.153	0.000		
	t test	-0.117	-0.513	0.000	0.515	0.000		
	Prob> t	0.9078	0.6144	1.0000	0.6127	1.0000		

Item	19: * is keyed	1	2	3*	4	5	Omit	Invalid
Q19	Responses	30.0%	5.0%	60.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%	16.7%	0.0%	83.3%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	0.0%	66.7%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.078	-0.163	0.145	0.000	0.000
Biserial	-0.102	-0.345	0.184	0.000	0.000

Item-Remainder:

Point Bis	0.063	-0.115	-0.029	0.049	0.000
Biserial	0.083	-0.244	-0.037	0.105	0.000
t test	0.267	-0.493	-0.125	0.210	0.000
Prob> t	0.7927	0.6279	0.9022	0.8359	1.0000

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency

Item	20: * is keyed	1*	2	3	4	5	Omit	Invalid
Q20	Responses	65.0%	30.0%	0.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%	83.3%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	66.7%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.261	-0.311	0.000	0.082	0.000
Biserial	0.336	-0.409	0.000	0.172	0.000

Item-Remainder:

Point Bis	0.094	-0.164	0.000	0.139	0.000
Biserial	0.121	-0.216	0.000	0.294	0.000
t test	0.402	-0.706	0.000	0.595	0.000
Prob> t	0.6927	0.4892	1.0000	0.5592	1.0000

Item	21: * is keyed	1	2*	3	4	5	Omit	Invalid
Q21	Responses	10.0%	70.0%	5.0%	15.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	83.3%	0.0%	16.7%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	33.3%	33.3%	33.3%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.059	0.155	-0.408	0.000	0.000
Biserial	0.101	0.205	-0.862	0.000	0.000

Item-Remainder:

Point Bis	0.144	-0.008	-0.355	0.106	0.000
Biserial	0.246	-0.010	-0.751	0.162	0.000
t test	0.618	-0.033	-1.613	0.452	0.000
Prob> t	0.5446	0.9738	0.1242	0.6568	1.0000

Item	22: * is keyed	1*	2	3	4	5	Omit	Invalid
Q22	Responses	50.0%	5.0%	15.0%	30.0%	0.0%	0.0%	0.0%
	Upper 33%	66.7%	16.7%	0.0%	16.7%	0.0%	0.0%	0.0%
	Lower 33%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.071	0.408	-0.249	-0.078	0.000
Biserial	0.089	0.862	-0.381	-0.102	0.000

Item-Remainder:

Point Bis	-0.106	0.448	-0.174	0.039	0.000
Biserial	-0.133	0.946	-0.266	0.051	0.000
t test	-0.454	2.123	-0.749	0.164	0.000
Prob> t	0.6553	0.0479	0.4636	0.8713	1.0000

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency								
Item 23: *	is keyed	1	2	3	4*	5	Omit	Invalid
Q23	Responses	0.0%	50.0%	10.0%	40.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	33.3%	33.3%	33.3%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.071	-0.415	0.182	0.000		
	Biserial	0.000	0.089	-0.710	0.230	0.000		
Item-Remainder:								
	Point Bis	0.000	0.217	-0.374	0.007	0.000		
	Biserial	0.000	0.272	-0.639	0.009	0.000		
	t test	0.000	0.943	-1.710	0.031	0.000		
	Prob> t	1.0000	0.3579	0.1044	0.9753	1.0000		
Item 24: *	is keyed	1*	2	3	4	5	Omit	Invalid
Q24	Responses	65.0%	15.0%	15.0%	5.0%	0.0%	0.0%	0.0%
	Upper 33%	66.7%	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	0.0%	66.7%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.224	0.149	-0.448	0.000	0.000		
	Biserial	0.288	0.229	-0.687	0.000	0.000		
Item-Remainder:								
	Point Bis	0.055	0.253	-0.360	0.054	0.000		
	Biserial	0.071	0.387	-0.551	0.115	0.000		
	t test	0.235	1.108	-1.636	0.231	0.000		
	Prob> t	0.8165	0.2825	0.1192	0.8200	1.0000		
Item 25: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q25	Responses	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	0.0%	66.7%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.246	0.676	-0.534	0.000	0.000		
	Biserial	-0.336	0.847	-0.728	0.000	0.000		
Item-Remainder:								
	Point Bis	-0.162	0.560	-0.485	0.000	0.000		
	Biserial	-0.220	0.702	-0.661	0.000	0.000		
	t test	-0.695	2.868	-2.353	0.000	0.000		
	Prob> t	0.4959	0.0102	0.0302	1.0000	1.0000		

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency								
Item 26: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q26	Responses	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	16.7%	50.0%	33.3%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.288	0.411	-0.107	0.000	0.000		
	Biserial	-0.392	0.560	-0.134	0.000	0.000		
Item-Remainder:								
	Point Bis	-0.249	0.271	-0.019	0.000	0.000		
	Biserial	-0.340	0.369	-0.024	0.000	0.000		
	t test	-1.093	1.195	-0.080	0.000	0.000		
	Prob> t	0.2890	0.2477	0.9374	1.0000	1.0000		
Item 27: *	is keyed	1	2	3	4*	5	Omit	Invalid

Q27	Responses	10.0%	80.0%	0.0%	10.0%	0.0%	0.0%	0.0%
	Upper 33%	16.7%	83.3%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.178	0.044	0.000	-0.237	0.000		
	Biserial	0.304	0.064	0.000	-0.405	0.000		
	Item-Remainder:							
	Point Bis	0.184	0.112	0.000	-0.334	0.000		
	Biserial	0.315	0.160	0.000	-0.570	0.000		
	t test	0.795	0.479	0.000	-1.502	0.000		
	Prob> t	0.4371	0.6377	1.0000	0.1504	1.0000		
Item 28:	* is keyed	1*	2	3	4	5	Omit	Invalid
Q28	Responses	90.0%	0.0%	0.0%	10.0%	0.0%	0.0%	0.0%
	Upper 33%	83.3%	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%
	Lower 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	-0.059	0.000	0.000	0.059	0.000		
	Biserial	-0.101	0.000	0.000	0.101	0.000		
	Item-Remainder:							
	Point Bis	-0.164	0.000	0.000	0.164	0.000		
	Biserial	-0.280	0.000	0.000	0.280	0.000		
	t test	-0.706	0.000	0.000	0.706	0.000		
	Prob> t	0.4894	1.0000	1.0000	0.4894	1.0000		
	ITEM macro: Subtests and BY groups							
	----- BY=1 -----							
	Grammar Proficiency							
Item 29:	* is keyed	1	2*	3	4	5	Omit	Invalid
Q29	Responses	0.0%	35.0%	0.0%	65.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.000	0.448	0.000	-0.448	0.000		
	Biserial	0.000	0.576	0.000	-0.576	0.000		
	Item-Remainder:							
	Point Bis	0.000	0.297	0.000	-0.297	0.000		
	Biserial	0.000	0.382	0.000	-0.382	0.000		
	t test	0.000	1.318	0.000	-1.318	0.000		
	Prob> t	1.0000	0.2040	1.0000	0.2040	1.0000		
Item 30:	* is keyed	1	2	3*	4	5	Omit	Invalid
Q30	Responses	0.0%	5.0%	60.0%	35.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%
	Item-Total:							
	Point Bis	0.000	-0.163	0.508	-0.448	0.000		
	Biserial	0.000	-0.345	0.645	-0.576	0.000		
	Item-Remainder:							
	Point Bis	0.000	-0.124	0.362	-0.315	0.000		
	Biserial	0.000	-0.261	0.459	-0.406	0.000		
	t test	0.000	-0.529	1.646	-1.408	0.000		
	Prob> t	1.0000	0.6033	0.1171	0.1762	1.0000		
Item 31:	* is keyed	1	2*	3	4	5	Omit	Invalid
Q31	Responses	0.0%	75.0%	5.0%	20.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	83.3%	0.0%	16.7%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%

Point Bis	0.000	0.329	-0.163	-0.267	0.000
Biserial	0.000	0.448	-0.345	-0.381	0.000

Item-Remainder:

Point Bis	0.000	0.182	-0.106	-0.139	0.000
Biserial	0.000	0.248	-0.224	-0.198	0.000
t test	0.000	0.784	-0.453	-0.595	0.000
Prob> t	1.0000	0.4430	0.6558	0.5592	1.0000

ITEM macro: Subtests and BY groups

----- BY=1 -----

Grammar Proficiency

Item	32: * is keyed	1	2	3	4*	5	Omit	Invalid
Q32	Responses	45.0%	10.0%	15.0%	25.0%	0.0%	5.0%	0.0%
	Upper 33%	33.3%	0.0%	16.7%	33.3%	0.0%	16.7%	0.0%
	Lower 33%	33.3%	33.3%	33.3%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.143	-0.356	0.000	0.288	0.000
Biserial	-0.180	-0.608	0.000	0.392	0.000

Item-Remainder:

Point Bis	-0.065	-0.337	0.039	0.138	0.000
Biserial	-0.081	-0.577	0.059	0.188	0.000
t test	-0.275	-1.520	0.164	0.591	0.000
Prob> t	0.7864	0.1459	0.8715	0.5616	1.0000

Item	33: * is keyed	1	2	3*	4	5	Omit	Invalid
Q33	Responses	0.0%	40.0%	30.0%	30.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	83.3%	16.7%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	-0.254	0.660	-0.388	0.000
Biserial	0.000	-0.322	0.870	-0.512	0.000

Item-Remainder:

Point Bis	0.000	-0.185	0.552	-0.353	0.000
Biserial	0.000	-0.235	0.727	-0.466	0.000
t test	0.000	-0.801	2.806	-1.603	0.000
Prob> t	1.0000	0.4338	0.0117	0.1264	1.0000

ITEM macro: Subtests and BY groups

----- BY=2 (第二分组, 后 12 人) -----

English Final(总测验)

Grade Report (结果与第七部分相同)

SSN	Score	#Missing	#Invalid	Percent
		19	1	0
217289073	20	1	1	61%
	18	0	1	55%
234171262	12	0	0	36%
	12	0	0	36%
059486239	22	0	0	67%
232721382	23	0	0	70%
17638728	20	0	0	61%
	17	0	0	52%
194381114	23	0	0	70%
198424787	22	0	0	67%
190521297	20	0	0	61%

ITEM macro: Subtests and BY groups

----- BY=2 -----

English Final(总测验)

Summary of Test Statistics(结果与第七部分相同)

Number of Items	33
Number of Subjects	12
Mean Score	19.000
Variance of Scores	14.182
Standard Deviation	3.766
Kuder-Richardson 20	0.550
Kuder-Richardson 21	0.392
Standard Error (from KR20)	2.527
Standard Error (from KR21)	2.937
Minimum Score	12
Maximum Score	23
Total Number of Answers	396
Number Missing	2
Number Invalid	2
Spearman-Brown Prophecy (from KR21): To obtain a reliability of 0.90 the test should contain 461 items	

ITEM macro: Subtests and BY groups

----- BY=2 -----

English Final(总测验)

Test Frequency Distribution(结果与第七部分相同)

Raw Score	Standard Score	Per- Centile	Percent	Freq	Cum Freq	Each X represents 1 score	
23	606	91	16.7%	2	12	XX	
22	580	75	16.7%	2	10	XX	
21	553	66	0.0%	0	8		
20	527	54	25.0%	3	8	XXX	
19	500	37	8.3%	1	5	X	
18	473	29	8.3%	1	4	X	
17	447	20	8.3%	1	3	X	
16	420	16	0.0%	0	2		
15	394	16	0.0%	0	2		
14	367	16	0.0%	0	2		
13	341	16	0.0%	0	2		
12	314	8	16.7%	2	2	XX	

ITEM macro: Subtests and BY groups

----- BY=2 -----

English Final(总测验)

Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	8.3%	91.7%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	0.000	0.000	0.000
Biserial	0.000	0.000	0.000	0.000	0.000

Item-Remainder:

Point Bis	0.000	0.000	0.076	-0.076	0.000
Biserial	0.000	0.000	0.138	-0.138	0.000
t test	0.000	0.000	0.242	-0.242	0.000
Prob> t	1.0000	1.0000	0.8134	0.8134	1.0000

(其余 32 题的分析省略)

ITEM macro: Subtests and BY groups

----- BY=2 (第二分组, 后 12 人) -----

Spelling Proficiency(拼音子测验)

Grade Report

SSN	Score	#Missing	#Invalid	Percent
	3	0	0	30%
217289073	8	0	1	80%
	7	0	1	70%
234171262	5	0	0	50%
	2	0	0	20%
059486239	5	0	0	50%
232721382	8	0	0	80%
17638728	6	0	0	60%
	4	0	0	40%
194381114	7	0	0	70%
198424787	6	0	0	60%
190521297	6	0	0	60%

ITEM macro: Subtests and BY groups

----- BY=2 -----

Spelling Proficiency

Summary of Test Statistics

Number of Items	10
Number of Subjects	12
Mean Score	5.583
Variance of Scores	3.538
Standard Deviation	1.881
Kuder-Richardson 20	0.438
Kuder-Richardson 21	0.266
Standard Error (from KR20)	1.410
Standard Error (from KR21)	1.611
Minimum Score	2
Maximum Score	8
Total Number of Answers	120
Number Missing	0
Number Invalid	2

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 249 items

ITEM macro: Subtests and BY groups

----- BY=2 -----

Spelling Proficiency

Test Frequency Distribution

Raw Score	Standard Score	Per- Centile	Percent	Freq	Cum Freq	Each X represents 1 score
8	628	91	16.7%	2	12	XX
7	575	75	16.7%	2	10	XX
6	522	54	25.0%	3	8	XXX
5	469	33	16.7%	2	5	XX
4	416	20	8.3%	1	3	X
3	363	12	8.3%	1	2	X
2	309	4	8.3%	1	1	X

ITEM macro: Subtests and BY groups

----- BY=2 -----

Spelling Proficiency

Item	1: * is keyed	1	2	3	4*	5	Omit	Invalid
Q1	Responses	0.0%	0.0%	8.3%	91.7%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.000	-0.433	0.433	0.000		
	Biserial	0.000	0.000	-0.780	0.780	0.000		
Item-Remainder:								
	Point Bis	0.000	0.000	-0.296	0.296	0.000		
	Biserial	0.000	0.000	-0.533	0.533	0.000		
	t test	0.000	0.000	-0.979	0.979	0.000		
	Prob> t	1.0000	1.0000	0.3508	0.3508	1.0000		
Item	2: * is keyed	1	2	3*	4	5	Omit	Invalid
Q2	Responses	0.0%	8.3%	91.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	-0.600	0.600	0.000	0.000		
	Biserial	0.000	-1.082	1.082	0.000	0.000		
Item-Remainder:								
	Point Bis	0.000	-0.487	0.487	0.000	0.000		
	Biserial	0.000	-0.879	0.879	0.000	0.000		
	t test	0.000	-1.765	1.765	0.000	0.000		
	Prob> t	1.0000	0.1081	0.1081	1.0000	1.0000		
Item	3: * is keyed	1	2	3*	4	5	Omit	Invalid
Q3	Responses	16.7%	16.7%	66.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	33.3%	66.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.517	-0.517	0.818	0.000	0.000		
	Biserial	-0.772	-0.772	1.061	0.000	0.000		
Item-Remainder:								
	Point Bis	-0.440	-0.440	0.695	0.000	0.000		
	Biserial	-0.656	-0.656	0.901	0.000	0.000		
	t test	-1.548	-1.548	3.058	0.000	0.000		
	Prob> t	0.1527	0.1527	0.0121	1.0000	1.0000		

ITEM macro: Subtests and BY groups

----- BY=2 -----

Spelling Proficiency

Item	4: * is keyed	1	2	3*	4	5	Omit	Invalid
Q4	Responses	41.7%	8.3%	25.0%	25.0%	0.0%	0.0%	0.0%
	Upper 33%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%

		Lower 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Item-Total:								
	Point Bis	-0.461	0.405	0.240	0.027	0.000			
	Biserial	-0.583	0.729	0.328	0.036	0.000			
	Item-Remainder:								
	Point Bis	-0.355	0.460	0.000	0.110	0.000			
	Biserial	-0.448	0.829	0.000	0.150	0.000			
	t test	-1.199	1.638	0.000	0.350	0.000			
	Prob> t	0.2581	0.1324	1.0000	0.7334	1.0000			
Item	5: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q5	Responses	8.3%	33.3%	16.7%	41.7%	0.0%	0.0%	0.0%	
	Upper 33%	0.0%	50.0%	25.0%	25.0%	0.0%	0.0%	0.0%	
	Lower 33%	33.3%	0.0%	33.3%	33.3%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.600	0.458	-0.021	-0.086	0.000			
	Biserial	-1.082	0.594	-0.031	-0.109	0.000			
	Item-Remainder:								
	Point Bis	-0.598	0.216	0.068	0.077	0.000			
	Biserial	-1.078	0.280	0.102	0.098	0.000			
	t test	-2.358	0.698	0.216	0.245	0.000			
	Prob> t	0.0401	0.5008	0.8332	0.8112	1.0000			
Item	6: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q6	Responses	41.7%	0.0%	16.7%	25.0%	0.0%	0.0%	16.7%	
	Upper 33%	0.0%	0.0%	25.0%	25.0%	0.0%	0.0%	50.0%	
	Lower 33%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.555	0.000	-0.021	0.240	0.000			
	Biserial	-0.702	0.000	-0.031	0.328	0.000			
	Item-Remainder:								
	Point Bis	-0.706	0.000	0.070	0.319	0.000			
	Biserial	-0.892	0.000	0.105	0.434	0.000			
	t test	-3.153	0.000	0.223	1.063	0.000			
	Prob> t	0.0103	1.0000	0.8277	0.3130	1.0000			

ITEM macro: Subtests and BY groups

----- BY=2 -----

Spelling Proficiency

Item	7: * is keyed	1	2*	3	4	5	Omit	Invalid	
Q7	Responses	25.0%	58.3%	16.7%	0.0%	0.0%	0.0%	0.0%	
	Upper 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	33.3%	33.3%	33.3%	0.0%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	-0.080	0.368	-0.393	0.000	0.000			
	Biserial	-0.109	0.464	-0.586	0.000	0.000			
	Item-Remainder:								
	Point Bis	0.114	0.100	-0.266	0.000	0.000			
	Biserial	0.156	0.127	-0.396	0.000	0.000			
	t test	0.364	0.319	-0.871	0.000	0.000			
	Prob> t	0.7235	0.7562	0.4039	1.0000	1.0000			
Item	8: * is keyed	1*	2	3	4	5	Omit	Invalid	
Q8	Responses	33.3%	50.0%	8.3%	8.3%	0.0%	0.0%	0.0%	
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Lower 33%	0.0%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%	
	Item-Total:								
	Point Bis	0.753	-0.509	0.070	-0.433	0.000			
	Biserial	0.976	-0.638	0.126	-0.780	0.000			

Item-Remainder:
Point Bis 0.598 -0.394 0.153 -0.459 0.000
Biserial 0.775 -0.494 0.276 -0.827 0.000
t test 2.357 -1.357 0.489 -1.632 0.000
Prob>|t| 0.0402 0.2045 0.6352 0.1337 1.0000

Item	9: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q9		Responses	0.0%	50.0%	41.7%	8.3%	0.0%	0.0%	0.0%
		Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	0.0%	33.3%	66.7%	0.0%	0.0%	0.0%	0.0%

Item-Total:
Point Bis 0.000 0.509 -0.555 0.070 0.000
Biserial 0.000 0.638 -0.702 0.126 0.000

Item-Remainder:
Point Bis 0.000 0.260 -0.360 0.172 0.000
Biserial 0.000 0.325 -0.455 0.310 0.000
t test 0.000 0.850 -1.219 0.553 0.000
Prob>|t| 1.0000 0.4152 0.2507 0.5926 1.0000

ITEM macro: Subtests and BY groups

----- BY=2 -----

Spelling Proficiency

Item	10: *	is keyed	1	2*	3	4	5	Omit	Invalid
Q10		Responses	0.0%	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%
		Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
		Lower 33%	0.0%	33.3%	0.0%	66.7%	0.0%	0.0%	0.0%

Item-Total:
Point Bis 0.000 0.622 0.000 -0.622 0.000
Biserial 0.000 0.806 0.000 -0.806 0.000

Item-Remainder:
Point Bis 0.000 0.418 0.000 -0.418 0.000
Biserial 0.000 0.541 0.000 -0.541 0.000
t test 0.000 1.453 0.000 -1.453 0.000
Prob>|t| 1.0000 0.1768 1.0000 0.1768 1.0000

ITEM macro: Subtests and BY groups

----- BY=2 (第二分组, 后 12 人) -----

Grammar Proficiency(文法子测验)

Grade Report

SSN	Score	#Missing	#Invalid	Percent
	16	1	0	70%
217289073	12	1	0	52%
	11	0	0	48%
234171262	7	0	0	30%
	10	0	0	43%
059486239	17	0	0	74%
232721382	15	0	0	65%
17638728	14	0	0	61%
	13	0	0	57%
194381114	16	0	0	70%
198424787	16	0	0	70%
190521297	14	0	0	61%

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Summary of Test Statistics

Number of Items	23
Number of Subjects	12
Mean Score	13.417
Variance of Scores	8.811
Standard Deviation	2.968
Kuder-Richardson 20	0.514
Kuder-Richardson 21	0.322
Standard Error (from KR20)	2.069
Standard Error (from KR21)	2.444
Minimum Score	7
Maximum Score	17
Total Number of Answers	276
Number Missing	2
Number Invalid	0

Spearman-Brown Prophecy (from KR21):
To obtain a reliability of 0.90
the test should contain 437 items

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Test Frequency Distribution

Raw Score	Standard Score	Per-Centile	Percent	Freq	Cum Freq	Each X represents 1 score
17	621	95	8.3%	1	12	X
16	587	79	25.0%	3	11	XXX
15	553	62	8.3%	1	8	X
14	520	50	16.7%	2	7	XX
13	486	37	8.3%	1	5	X
12	452	29	8.3%	1	4	X
11	419	20	8.3%	1	3	X
10	385	12	8.3%	1	2	X
9	351	8	0.0%	0	1	
8	318	8	0.0%	0	1	
7	284	4	8.3%	1	1	X

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item	11: * is keyed	1	2*	3	4	5	Omit	Invalid
Q11	Responses	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.000	0.000	0.000	0.000		
	Biserial	0.000	0.000	0.000	0.000	0.000		
Item-Remainder:								
	Point Bis	0.000	0.000	0.000	0.000	0.000		
	Biserial	0.000	0.000	0.000	0.000	0.000		
	t test	0.000	0.000	0.000	0.000	0.000		

		Prob> t	1.0000	1.0000	1.0000	1.0000	1.0000	
Item 12:	* is keyed	1	2	3*	4	5	Omit	Invalid
Q12	Responses	0.0%	0.0%	91.7%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.000	0.150	-0.150	0.000		
	Biserial	0.000	0.000	0.271	-0.271	0.000		
Item-Remainder:								
	Point Bis	0.000	0.000	0.054	-0.054	0.000		
	Biserial	0.000	0.000	0.097	-0.097	0.000		
	t test	0.000	0.000	0.170	-0.170	0.000		
	Prob> t	1.0000	1.0000	0.8686	0.8686	1.0000		
Item 13:	* is keyed	1	2	3*	4	5	Omit	Invalid
Q13	Responses	8.3%	16.7%	66.7%	0.0%	0.0%	8.3%	0.0%
	Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	25.0%	25.0%	0.0%	0.0%	25.0%	0.0%
Item-Total:								
	Point Bis	-0.362	-0.459	0.664	0.000	0.000		
	Biserial	-0.653	-0.685	0.860	0.000	0.000		
Item-Remainder:								
	Point Bis	-0.325	-0.394	0.554	0.000	0.000		
	Biserial	-0.585	-0.588	0.718	0.000	0.000		
	t test	-1.086	-1.356	2.103	0.000	0.000		
	Prob> t	0.3031	0.2050	0.0617	1.0000	1.0000		

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item 14:	* is keyed	1*	2	3	4	5	Omit	Invalid
Q14	Responses	83.3%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.249	0.000	0.249	0.000	0.000		
	Biserial	-0.372	0.000	0.372	0.000	0.000		
Item-Remainder:								
	Point Bis	-0.366	0.000	0.366	0.000	0.000		
	Biserial	-0.545	0.000	0.545	0.000	0.000		
	t test	-1.242	0.000	1.242	0.000	0.000		
	Prob> t	0.2427	1.0000	0.2427	1.0000	1.0000		
Item 15:	* is keyed	1*	2	3	4	5	Omit	Invalid
Q15	Responses	25.0%	8.3%	50.0%	16.7%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.085	0.274	-0.205	0.170	0.000		
	Biserial	-0.115	0.494	-0.257	0.254	0.000		
Item-Remainder:								
	Point Bis	-0.231	0.293	-0.115	0.205	0.000		
	Biserial	-0.315	0.529	-0.144	0.306	0.000		
	t test	-0.752	0.971	-0.365	0.662	0.000		
	Prob> t	0.4693	0.3545	0.7230	0.5230	1.0000		

Item 16:	* is keyed	1	2	3	4*	5	Omit	Invalid
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Q16	Responses	0.0%	0.0%	33.3%	58.3%	0.0%	8.3%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	75.0%	0.0%	25.0%	0.0%
	Lower 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.000	-0.601	0.421	0.000		
	Biserial	0.000	0.000	-0.780	0.532	0.000		
Item-Remainder:								
	Point Bis	0.000	0.000	-0.485	0.264	0.000		
	Biserial	0.000	0.000	-0.629	0.333	0.000		
	t test	0.000	0.000	-1.755	0.864	0.000		
	Prob> t	1.0000	1.0000	0.1098	0.4078	1.0000		

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item	17: * is keyed	1	2	3	4*	5	Omit	Invalid
Q17	Responses	0.0%	8.3%	41.7%	50.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	25.0%	75.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.000	0.062	-0.362	0.323	0.000		
	Biserial	0.000	0.112	-0.457	0.404	0.000		
Item-Remainder:								
	Point Bis	0.000	0.120	-0.223	0.153	0.000		
	Biserial	0.000	0.216	-0.281	0.192	0.000		
	t test	0.000	0.382	-0.722	0.490	0.000		
	Prob> t	1.0000	0.7103	0.4870	0.6348	1.0000		
Item	18: * is keyed	1	2	3	4*	5	Omit	Invalid
Q18	Responses	16.7%	0.0%	0.0%	83.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	-0.616	0.000	0.000	0.616	0.000		
	Biserial	-0.919	0.000	0.000	0.919	0.000		
Item-Remainder:								
	Point Bis	-0.525	0.000	0.000	0.525	0.000		
	Biserial	-0.782	0.000	0.000	0.782	0.000		
	t test	-1.948	0.000	0.000	1.948	0.000		
	Prob> t	0.0800	1.0000	1.0000	0.0800	1.0000		
Item	19: * is keyed	1	2	3*	4	5	Omit	Invalid
Q19	Responses	41.7%	16.7%	41.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%
Item-Total:								
	Point Bis	0.292	-0.695	0.233	0.000	0.000		
	Biserial	0.369	-1.037	0.294	0.000	0.000		
Item-Remainder:								
	Point Bis	0.427	-0.646	0.061	0.000	0.000		
	Biserial	0.540	-0.964	0.077	0.000	0.000		
	t test	1.495	-2.677	0.193	0.000	0.000		
	Prob> t	0.1659	0.0232	0.8505	1.0000	1.0000		

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item	20: * is keyed	1*	2	3	4	5	Omit	Invalid
Q20	Responses	83.3%	0.0%	0.0%	16.7%	0.0%	0.0%	0.0%
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	0.0%	0.0%	50.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.380	0.000	0.000	-0.380	0.000
Biserial	0.567	0.000	0.000	-0.567	0.000

Item-Remainder:

Point Bis	0.260	0.000	0.000	-0.260	0.000
Biserial	0.388	0.000	0.000	-0.388	0.000
t test	0.852	0.000	0.000	-0.852	0.000
Prob> t	0.4142	1.0000	1.0000	0.4142	1.0000

Item	21: * is keyed	1	2*	3	4	5	Omit	Invalid
Q21	Responses	16.7%	83.3%	0.0%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.459	0.459	0.000	0.000	0.000
Biserial	-0.685	0.685	0.000	0.000	0.000

Item-Remainder:

Point Bis	-0.346	0.346	0.000	0.000	0.000
Biserial	-0.516	0.516	0.000	0.000	0.000
t test	-1.167	1.167	0.000	0.000	0.000
Prob> t	0.2703	0.2703	1.0000	1.0000	1.0000

Item	22: * is keyed	1*	2	3	4	5	Omit	Invalid
Q22	Responses	33.3%	0.0%	41.7%	25.0%	0.0%	0.0%	0.0%
	Upper 33%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	0.0%	50.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.332	0.000	-0.124	-0.220	0.000
Biserial	0.430	0.000	-0.157	-0.300	0.000

Item-Remainder:

Point Bis	0.173	0.000	-0.026	-0.159	0.000
Biserial	0.225	0.000	-0.033	-0.217	0.000
t test	0.556	0.000	-0.082	-0.510	0.000
Prob> t	0.5904	1.0000	0.9364	0.6214	1.0000

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item	23: * is keyed	1	2	3	4*	5	Omit	Invalid
Q23	Responses	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	75.0%	0.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	25.0%	0.0%	75.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.323	0.000	-0.323	0.000
Biserial	0.000	0.404	0.000	-0.404	0.000

Item-Remainder:

Point Bis	0.000	0.466	0.000	-0.466	0.000
Biserial	0.000	0.584	0.000	-0.584	0.000
t test	0.000	1.665	0.000	-1.665	0.000
Prob> t	1.0000	0.1268	1.0000	0.1268	1.0000

Item	24: * is keyed	1*	2	3	4	5	Omit	Invalid
Q24	Responses	58.3%	16.7%	16.7%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	75.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%
	Lower 33%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:							
Point Bis		0.362	0.013	-0.695	0.274	0.000	
Biserial		0.457	0.020	-1.037	0.494	0.000	
Item-Remainder:							
Point Bis		0.198	0.110	-0.634	0.353	0.000	
Biserial		0.250	0.165	-0.946	0.637	0.000	
t test		0.639	0.351	-2.594	1.194	0.000	
Prob> t		0.5372	0.7329	0.0268	0.2600	1.0000	
Item 25:	* is keyed	1	2*	3	4	5	Omit Invalid
Q25	Responses	16.7%	58.3%	8.3%	16.7%	0.0%	0.0% 0.0%
	Upper 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0% 0.0%
	Lower 33%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0% 0.0%

Item-Total:						
Point Bis		-0.223	0.362	-0.362	0.013	0.000
Biserial		-0.333	0.457	-0.653	0.020	0.000
Item-Remainder:						
Point Bis		-0.138	0.198	-0.316	0.110	0.000
Biserial		-0.206	0.250	-0.570	0.165	0.000
t test		-0.440	0.639	-1.053	0.351	0.000
Prob> t		0.6691	0.5372	0.3169	0.7329	1.0000

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item 26:	* is keyed	1	2*	3	4	5	Omit	Invalid
Q26	Responses	8.3%	50.0%	41.7%	0.0%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	25.0%	25.0%	50.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:						
Point Bis		-0.362	0.557	-0.362	0.000	0.000
Biserial		-0.653	0.698	-0.457	0.000	0.000
Item-Remainder:						
Point Bis		-0.339	0.417	-0.233	0.000	0.000
Biserial		-0.611	0.523	-0.295	0.000	0.000
t test		-1.138	1.452	-0.759	0.000	0.000
Prob> t		0.2816	0.1772	0.4656	1.0000	1.0000

Item 27:	* is keyed	1	2	3	4*	5	Omit	Invalid
Q27	Responses	0.0%	91.7%	0.0%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:						
Point Bis		0.000	-0.168	0.000	0.168	0.000
Biserial		0.000	-0.303	0.000	0.303	0.000

Item-Remainder:						
Point Bis		0.000	-0.072	0.000	0.072	0.000
Biserial		0.000	-0.129	0.000	0.129	0.000
t test		0.000	-0.227	0.000	0.227	0.000
Prob> t		1.0000	0.8251	1.0000	0.8251	1.0000

Item 28:	* is keyed	1*	2	3	4	5	Omit	Invalid
Q28	Responses	83.3%	0.0%	8.3%	8.3%	0.0%	0.0%	0.0%
	Upper 33%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%	75.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:						
Point Bis		0.223	0.000	-0.044	-0.256	0.000
Biserial		0.333	0.000	-0.080	-0.462	0.000

Item-Remainder:

Point Bis	0.094	0.000	0.045	-0.172	0.000
Biserial	0.140	0.000	0.081	-0.309	0.000
t test	0.298	0.000	0.143	-0.551	0.000
Prob> t	0.7720	1.0000	0.8892	0.5939	1.0000

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item 29: * is keyed	1	2*	3	4	5	Omit	Invalid
Q29 Responses	25.0%	25.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Upper 33%	0.0%	50.0%	0.0%	50.0%	0.0%	0.0%	0.0%
Lower 33%	50.0%	25.0%	0.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.288	-0.017	0.000	0.264	0.000
Biserial	-0.392	-0.023	0.000	0.331	0.000

Item-Remainder:

Point Bis	-0.234	-0.167	0.000	0.347	0.000
Biserial	-0.318	-0.227	0.000	0.435	0.000
t test	-0.760	-0.535	0.000	1.170	0.000
Prob> t	0.4647	0.6040	1.0000	0.2691	1.0000

Item 30: * is keyed	1	2	3*	4	5	Omit	Invalid
Q30 Responses	0.0%	0.0%	91.7%	8.3%	0.0%	0.0%	0.0%
Upper 33%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Lower 33%	0.0%	0.0%	75.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.000	0.000	0.681	-0.681	0.000
Biserial	0.000	0.000	1.227	-1.227	0.000

Item-Remainder:

Point Bis	0.000	0.000	0.623	-0.623	0.000
Biserial	0.000	0.000	1.123	-1.123	0.000
t test	0.000	0.000	2.519	-2.519	0.000
Prob> t	1.0000	1.0000	0.0304	0.0304	1.0000

Item 31: * is keyed	1	2*	3	4	5	Omit	Invalid
Q31 Responses	8.3%	50.0%	0.0%	41.7%	0.0%	0.0%	0.0%
Upper 33%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower 33%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.168	0.733	0.000	-0.838	0.000
Biserial	0.303	0.919	0.000	-1.058	0.000

Item-Remainder:

Point Bis	0.251	0.634	0.000	-0.784	0.000
Biserial	0.453	0.794	0.000	-0.990	0.000
t test	0.821	2.590	0.000	-3.989	0.000
Prob> t	0.4306	0.0269	1.0000	0.0026	1.0000

ITEM macro: Subtests and BY groups

----- BY=2 -----

Grammar Proficiency

Item 32: * is keyed	1	2	3	4*	5	Omit	Invalid
Q32 Responses	33.3%	41.7%	8.3%	16.7%	0.0%	0.0%	0.0%
Upper 33%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Lower 33%	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	0.207	0.114	-0.681	0.092	0.000
Biserial	0.269	0.144	-1.227	0.137	0.000

Item-Remainder:

Point Bis	0.250	0.164	-0.665	-0.039	0.000
Biserial	0.324	0.207	-1.200	-0.059	0.000
t test	0.815	0.526	-2.819	-0.125	0.000
Prob> t	0.4339	0.6102	0.0182	0.9031	1.0000

Item	33: *	is keyed	1	2	3*	4	5	Omit	Invalid
Q33	Responses		8.3%	16.7%	50.0%	25.0%	0.0%	0.0%	0.0%
	Upper 33%		0.0%	25.0%	75.0%	0.0%	0.0%	0.0%	0.0%
	Lower 33%		25.0%	25.0%	25.0%	25.0%	0.0%	0.0%	0.0%

Item-Total:

Point Bis	-0.256	-0.066	0.498	-0.356	0.000
Biserial	-0.462	-0.098	0.625	-0.484	0.000

Item-Remainder:

Point Bis	-0.220	0.014	0.349	-0.275	0.000
Biserial	-0.396	0.021	0.437	-0.374	0.000
t test	-0.713	0.045	1.177	-0.903	0.000
Prob> t	0.4924	0.9651	0.2666	0.3878	1.0000