```
/*****************主教材各章例题SAS程序************/
/***************第十章*****************/

/****例10-1，单样本秩和检验***************/
data a10_1;
  input x@@;
   median=18.9;
   d=x-median;
cards;
0
0
0
0
0
12.4
34.1
69
98.4
129.5
156.1
163.5
170.9
177.6
172.4
180.3
189.2
192.2
196.8
205.3
;
proc univariate;
  var d;
run;

/****例10-2，配对秩和检验***************/
data a10_2;
  input x1 x2 @@;
  d=x1-x2;
cards;
15  16
14  12
8   5
17  19
20  16
10  13
22  9
15  15
3   7
13  46
;
proc univariate;
var d;
run;
```

```
/****例10-3，两组定量资料秩和检验***************/
data a10_3;
  input group ca@@;
cards;
1   1843
1   383
1   406
1   334
1   443
1   676
1   771
1   358
1   607
1   484
2   842
2   336
2   742
2   1367
2   1623
2   597
2   1976
2   1818
2   643
2   4534
;
proc univariate normal;
  class group;
  var ca;
run;
proc npar1way wilcoxon;
  class group;
  var ca;
run;

/****例10-4，两组计量资料秩和检验***************/
data a10_4;
  input group score@@;
cards;
1   0   1   2   1   3   1   4   1   6
1   0   1   2   1   3   1   5   1   6
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   7
1   0   1   2   1   3   1   5   1   8
1   0   1   2   1   3   1   5   1   8
1   0   1   2   1   3   1   5   1   8
1   0   1   2   1   3   1   5   1   8
1   0   1   2   1   3   1   5   1   8
```

1	0	1	2	1	3	1	5	1	8
1	0	1	2	1	3	1	6	1	9
1	1	1	2	1	3	1	6	1	9
1	1	1	2	1	3	1	6	1	9
1	1	1	2	1	3	1	6	1	9
1	1	1	2	1	3	1	6	1	9
1	1	1	2	1	3	1	6	1	9
1	1	1	2	1	4	1	6	1	9
1	1	1	3	1	4	1	6	1	10
1	1	1	3	1	4	1	6	1	10
1	1	1	3	1	4	1	6	1	10
1	1	1	3	1	4	1	6	1	10
1	1	1	3	1	4	1	6	1	10
1	1	1	3	1	4	1	6	1	11
1	1	1	3	1	4	1	6	1	11
1	1	1	3	1	4	1	6	1	11
1	1	1	3	1	4	1	6	1	11
1	1	1	3	1	4	1	6	1	11
1	1	1	3	1	4	1	6	1	11
1	1	1	3	1	4	1	6	1	11
2	0	2	7	2	11	2	14	2	19
2	0	2	8	2	11	2	14	2	19
2	2	2	8	2	11	2	14	2	19
2	2	2	8	2	11	2	14	2	19
2	2	2	8	2	11	2	14	2	19
2	2	2	8	2	11	2	14	2	19
2	3	2	8	2	11	2	14	2	19
2	3	2	8	2	11	2	14	2	19
2	3	2	8	2	11	2	15	2	19
2	3	2	9	2	12	2	15	2	19
2	5	2	9	2	12	2	15	2	20
2	5	2	9	2	12	2	15	2	20
2	5	2	9	2	12	2	15	2	20
2	5	2	9	2	12	2	15	2	20
2	5	2	9	2	12	2	16	2	20
2	5	2	9	2	12	2	16	2	20
2	5	2	9	2	12	2	16	2	20
2	5	2	9	2	12	2	16	2	20
2	5	2	9	2	12	2	16	2	20
2	5	2	9	2	12	2	16	2	20
2	5	2	9	2	13	2	16	2	20
2	5	2	9	2	13	2	17	2	21
2	5	2	9	2	13	2	17	2	21
2	6	2	9	2	13	2	17	2	21
2	6	2	9	2	13	2	17	2	21
2	6	2	9	2	13	2	17	2	21
2	6	2	9	2	13	2	17	2	21
2	6	2	10	2	13	2	17	2	21
2	6	2	10	2	13	2	17	2	21
2	6	2	10	2	14	2	18	2	21
2	6	2	10	2	14	2	18	2	21
2	6	2	10	2	14	2	18	2	21
2	6	2	10	2	14	2	18	2	22
2	7	2	10	2	14	2	18	2	24

```
2   7   2   11  2   14  2   18  2   24
2   7   2   11  2   14  2   18  2   24
2   7   2   11  2   14  2   18  2   24
2   7   2   11  2   14  2   19  2   24
2   7   2   11  2   14  2   19
;
proc univariate normal;
  class group;
  var score;
run;
proc npar1way wilcoxon;
  class group;
  var score;
run;

/****例10-5，两组等级资料秩和检验****************/
data a10_5;
  input group score@@;
cards;
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   1   1   2
1   1   1   1   1   1   1   2   1   2
1   1   1   1   1   1   1   2   1   3
1   1   1   1   1   1   1   2   1   3
1   1   1   1   1   1   1   2   1   3
1   1   1   1   1   1   1   2   1   3
1   1   1   1   1   1   1   2   1   3
1   1   1   1   1   1   1   2   1   3
1   1   1   1   1   1   1   2   1   3
1   1   1   1
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   1   2   2
2   1   2   1   2   1   2   2   2   2
2   1   2   1   2   1   2   2   2   3
2   1   2   1   2   1   2   2   2   3
```

```
2   1   2   1   2   1   2   2   2   3
2   1   2   1   2   1   2   2   2   3
2   1   2   1   2   1   2   2   2   3
2   1   2   1   2   1   2   2   2   3
2   1   2   1   2   1   2   2   2   3
2   1   2   1   2   1   2   2   2   3
2   1   2   1   2   1   2   2   2   3
2   1
;
proc univariate normal;
  class group;
  var score;
run;
proc npar1way wilcoxon;
  class group;
  var score;
run;

/****例10-6，多组计量资料秩和检验***************/
data a10_6;
  input group tnf@@;
cards;
1   0.218
1   0.051
1   0.186
1   0.198
1   0.036
2   0.253
2   0.558
2   0.352
2   0.284
2   0.487
3   0.695
3   0.53
3   0.645
3   0.621
3   0.384
;
proc univariate normal;
  class group;
  var TNF;
run;
proc npar1way wilcoxon;
  class group;
  var tnf;
run;

/****例10-7，多组等级资料秩和检验***************/
data a10_7;
  input group grade@@;
cards;
1   1   2   2   3   1   3   1   4   1
1   1   2   2   3   1   3   1   4   1
1   1   2   2   3   1   3   2   4   1
```

```
1   1   2   2   3   1   3   2   4   1
1   3   2   2   3   1   3   2   4   1
2   1   2   3   3   1   3   2   4   1
2   1   2   3   3   1   3   2   4   1
2   1   2   3   3   1   3   2   4   1
2   1   2   3   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   2   4   1
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   3   3   4   2
2   1   3   1   3   1   4   1   4   2
2   1   3   1   3   1   4   1   4   2
2   1   3   1   3   1   4   1   4   2
2   1   3   1   3   1   4   1   4   2
2   1   3   1   3   1   4   1   4   2
2   1   3   1   3   1   4   1   4   2
2   1   3   1   3   1   4   1   4   3
2   1   3   1   3   1   4   1   4   3
2   2   3   1   3   1   4   1   4   3
2   2   3   1   3   1
;
proc univariate normal;
  class group;
  var grade;
run;
proc npar1way wilcoxon;
  class group;
  var grade;
run;
```