

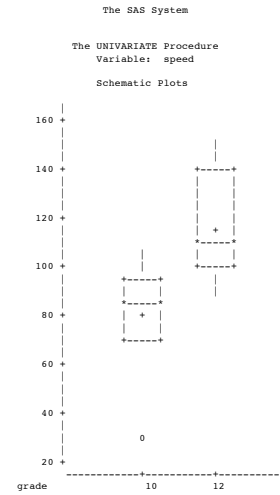
```

data mph;
input grade speed;
cards;
10 80
10 85
10 30
10 70
10 105
10 90
10 95
12 110
12 110
12 90
12 140
12 100
12 150
12 120
;
proc univariate plot;
var speed;
by grade;
run;

proc nparlway wilcoxon;
var speed;
class grade;
exact wilcoxon;
run;

```

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The SAS System

The NPARIWAY Procedure

Wilcoxon Scores (Rank Sums) for Variable speed
Classified by Variable grade

Grade	N	Sum of Scores	Expected Under H0	Std Dev Under H0	Mean Score
10	7	31.50	52.50	7.809018	4.50
12	7	73.50	52.50	7.809018	10.50

Average scores were used for ties.

Wilcoxon Two-Sample Test

Statistic (S) 31.5000

Normal Approximation

Z -2.6252
One-Sided Pr < Z 0.0043
Two-Sided Pr > |Z| 0.0087

t Approximation

One-Sided Pr < Z 0.0105
Two-Sided Pr > |Z| 0.0210

Exact Test

One-Sided Pr <= S 0.0026
Two-Sided Pr >= |S - Mean| 0.0052

Z includes a continuity correction of 0.5.

Kruskal-Wallis Test

Chi-Square 7.2318
DF 1
Pr > Chi-Square 0.0072

R code:
so=c(80,85,30,70,105,90,95)
se=c(110,110,90,140,100,150,120)
wilcox.test(so,se)

Results:
Wilcoxon rank sum test with continuity correction

data: so and se
W = 3.5, p-value = 0.00866
alternative hypothesis: true mu is not equal to 0

Warning message:
Cannot compute exact p-value with ties in: wilcox.test.default(so, se)