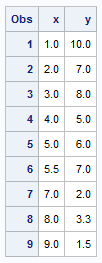
\*SIMPLE LINEAR REGRESSION;



**data** demo;

input x y;

cards;

1 10

2 7

3 8

4 5

5 6

5.5 7

7 2

8 3.3

9 1.5

;

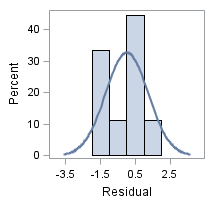
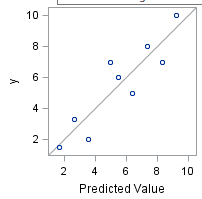
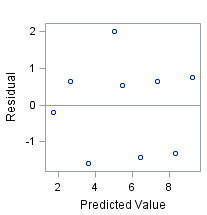
**proc** **print**;

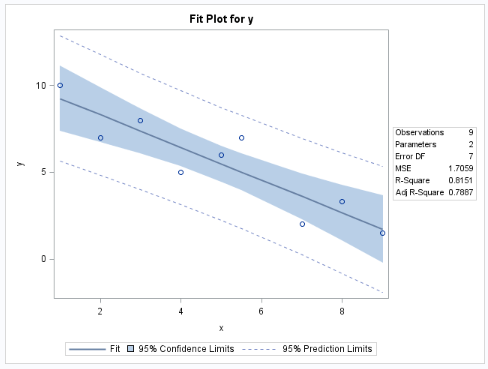
**run**;

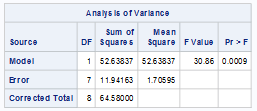
**proc** **reg** data=demo;

model y=x;

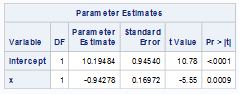
**run**;









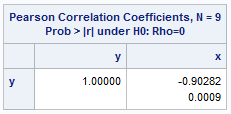


**proc** **corr**;

var y x;

with y;

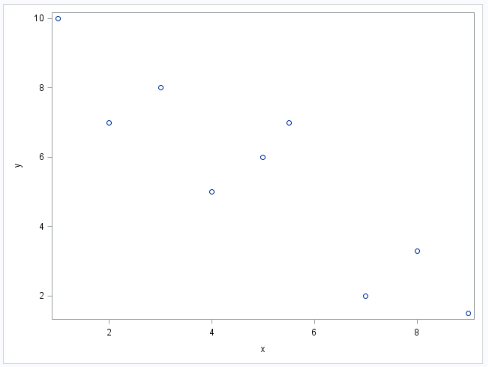
**run**;



**proc** **sgscatter** data=demo;

plot y\*x;

**run**;

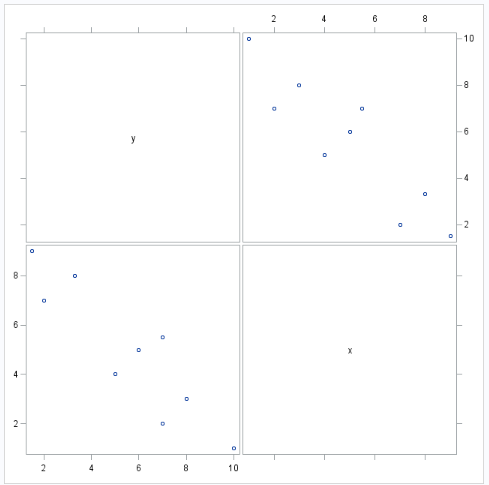


\*ATAU;

**proc** **sgscatter**;

matrix y x;

**run**;



\*y-hat = B0 + B1\*X ;

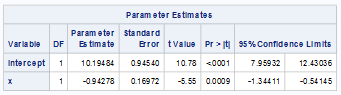
\* H0 :B1 =0 ;

\* H1 :B1 !=0 ;

**proc** **reg** data=demo;

model y=x / clb;

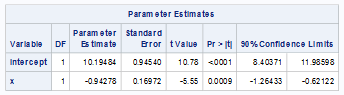
**run**;



**proc** **reg** data=demo alpha=**0.1**;

model y=x / clb;

**run**;



\*MULTIPLE LINEAR REGRESSION;

libname BP "C:\Users\Admin\Desktop\SAS\PROJECT SAS 1.0";

**data** BP;

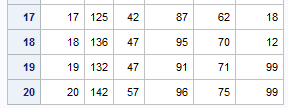
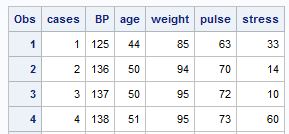
infile "C:\Users\Admin\Desktop\SAS\PROJECT SAS 1.0\BP.xls" dlm=',';

input cases BP age weight pulse stress;

**run**;

**proc** **print** data = BP;

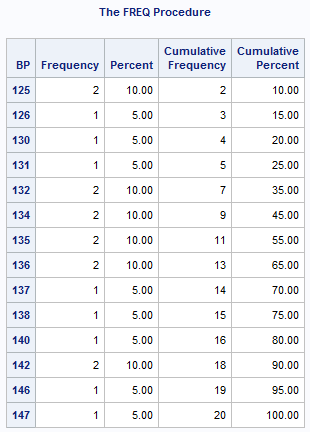
**run**;



**proc** **freq** data = BP;

table BP;

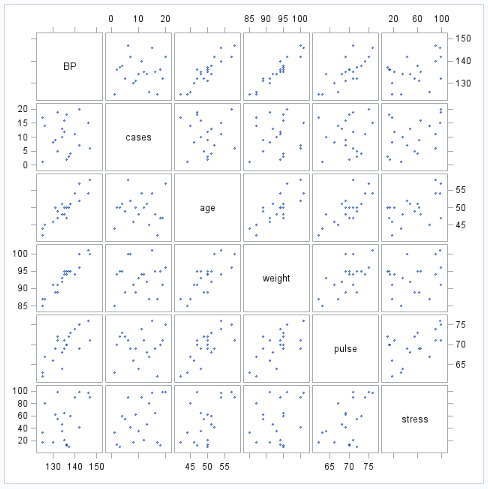
**run**;



**proc** **sgscatter** data = BP;

matrix BP cases age weight pulse stress;

**run**;

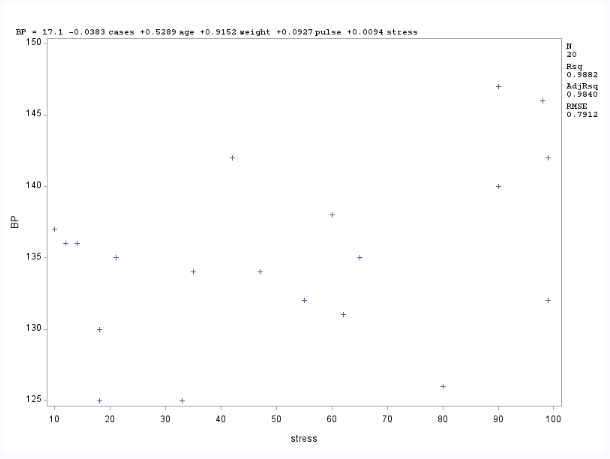


**proc** **reg** data = BP;

model BP = cases age weight pulse stress;

plot BP\*(stress)/pred;

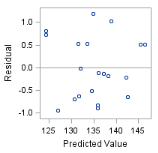
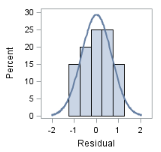
**run**;



**proc** **reg** plot=all;

model BP = cases age weight pulse stress;

**run**;



title1 "Residual vs. Predicted Plot";

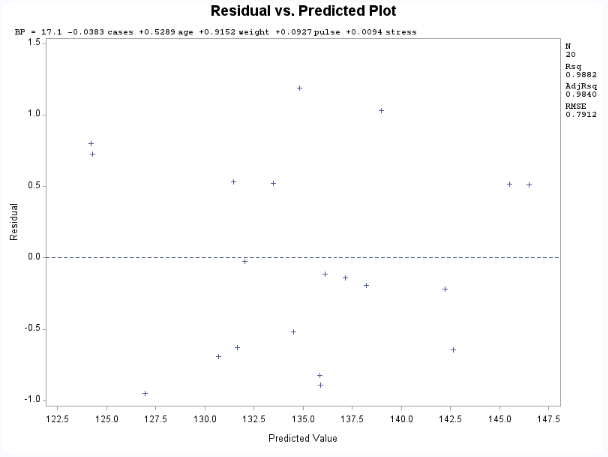
**proc** **reg**;

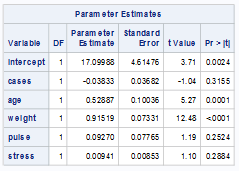
model BP = cases age weight pulse stress;

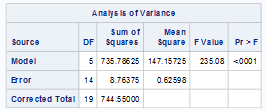
plot r.\*p.;

**run**;

title;









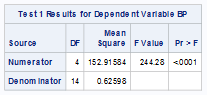
\*TEST ONE VARIABLE;

**proc** **reg** data=BP;

model BP = cases age weight pulse stress;

test cases=**0**,age=**0**,weight=**0**,pulse=**0**;

**run**;

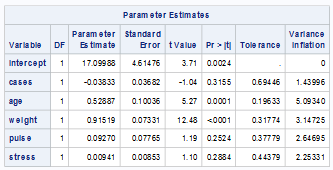


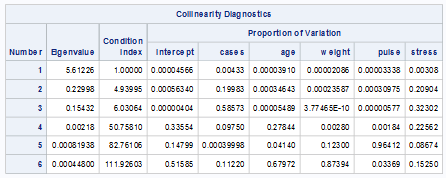
\*MULTICOLLINEARITY;

**proc** **reg** data=BP;

model BP = cases age weight pulse stress / tol vif collin;

**run**;





EXAMPLE 2:

**data** demo;

input y x1 x2 x3;

cards;

7 1 13 3

8 2 18 6

9 3 2 1

15 4 21 8

18 5 5 0

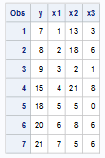
20 6 8 6

21 7 5 6

;

**proc** **print**;

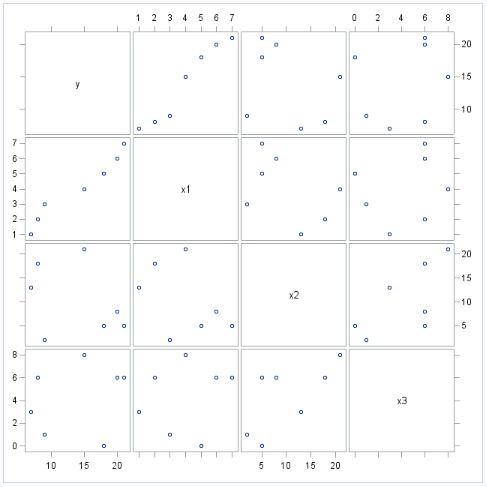
**run**;



**proc** **sgscatter**;

matrix y x1 x2 x3;

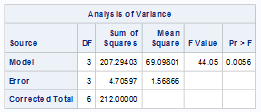
**run**;



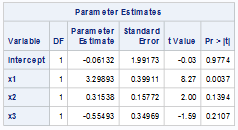
**proc** **reg** data = demo;

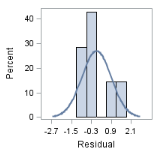
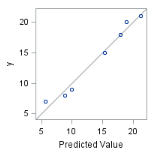
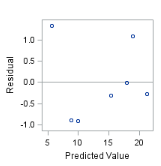
model y = x1 x2 x3;

**run**;









\*MODEL y-hat = B0 + B1\*X1 + B2\*X2 + B3\*X3 ;

\*OVERALL F-TEST;

\* HO = B1=B2=B3=0,

H1 = at least one of B1, B2, B3 is not 0;

\* partial F-test;

\*H0: B2=B3=0

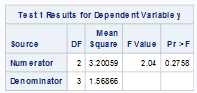
H1: At least one of B2, B3 is not 0;

**proc** **reg** data = demo;

model y = x1 x2 x3;

test x2=**0**, x3=**0**;

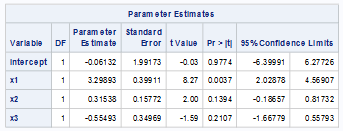
**run**;



**proc** **reg** data = demo;

model y = x1 x2 x3 / clb;

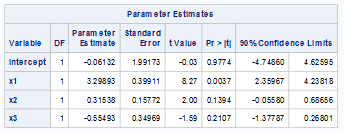
**run**;



**proc** **reg** data = demo alpha=**0.1**;

model y = x1 x2 x3 / clb;

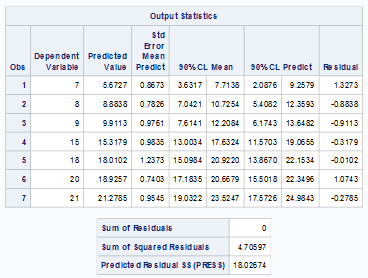
**run**;



**proc** **reg** data = demo alpha=**0.1**;

model y = x1 x2 x3 / cli clm;

**run**;



**data** demo2;

y=**.**;x1 =**4**; x2=**3**; x3=**4**;

**proc** **print**;

**run**;



**data** demo;

set demo demo2;

**proc** **print**;

**run**;

