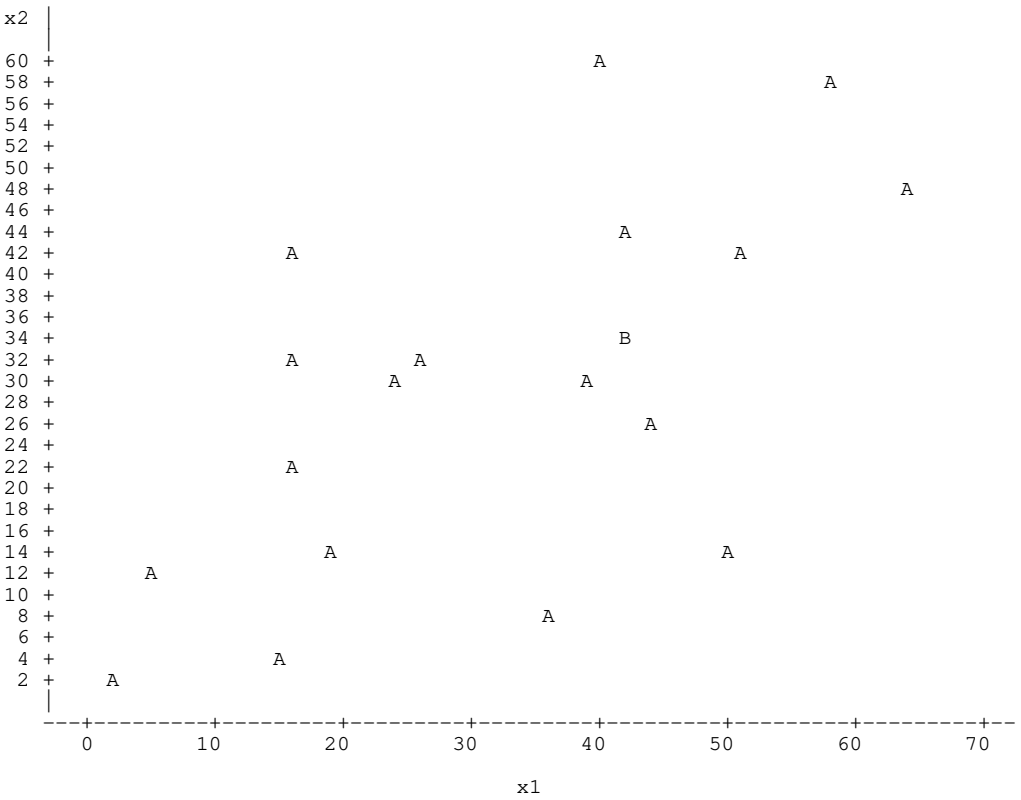
```
/* x2_8.sas */
/* Purpose:  */

title1 'Example 2.8. (See also: example 2.2)';

data a;
input x1 x2;
cards;
2 2
5 12
15 4
16 21
16 41
19 14
26 31
24 29
16 31
36 8
39 30
42 44
44 26
40 60
42 34
42 34
50 14
51 41
58 58
64 47
;

proc print data=a;
  var x1 x2;
title2 'List of data.';

proc plot data=a;
  plot x2*x1;
title2 'Plot of data.';

proc reg data=a;
  model x1=x2;
title2 'Regression x1=a*x2+b';

proc reg data=a;
  model x2=x1;
title2 'Regression x2=a*x1+b';

proc corr data=a;
  var x1 x2;
title2 'Compute correlation and test if zero';

run;
```

Example 2.8. (See also: example 2.2) 1
List of data.

Obs	x1	x2
1	2	2
2	5	12
3	15	4
4	16	21
5	16	41
6	19	14
7	26	31
8	24	29
9	16	31
10	36	8
11	39	30
12	42	44
13	44	26
14	40	60
15	42	34
16	42	34
17	50	14
18	51	41
19	58	58
20	64	47

Example 2.8. (See also: example 2.2) 2
Plot of data.

Plot of x2*x1. Legend: A = 1 obs, B = 2 obs, etc.



Example 2.8. (See also: example 2.2) 3
Regression x1=a*x2+b

The REG Procedure
Model: MODEL1
Dependent Variable: x1

Number of Observations Read	20
Number of Observations Used	20

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2248.40919	2248.40919	11.05	0.0038
Error	18	3662.14081	203.45227		
Corrected Total	19	5910.55000			

Root MSE	14.26367	R-Square	0.3804
Dependent Mean	32.35000	Adj R-Sq	0.3460
Coeff Var	44.09171		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	13.43775	6.52207	2.06	0.0541
x2	1	0.65102	0.19584	3.32	0.0038

Example 2.8. (See also: example 2.2) 4
Regression x2=a*x1+b

The REG Procedure
Model: MODEL1
Dependent Variable: x2

Number of Observations Read	20
Number of Observations Used	20

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	2018.03526	2018.03526	11.05	0.0038
Error	18	3286.91474	182.60637		
Corrected Total	19	5304.95000			

Root MSE	13.51319	R-Square	0.3804
Dependent Mean	29.05000	Adj R-Sq	0.3460
Coeff Var	46.51701		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	10.14726	6.43915	1.58	0.1325
x1	1	0.58432	0.17577	3.32	0.0038

/><><>