Obs	_	Species	Endemics	Area	Elevation	Nearest	Scruz	Adjacent
1	Baltra	58	23	25.09	346	0.6	0.6	1.84
2	Bartolome	31	21	1.24	109	0.6	26.3	572.33
3	Caldwell	3	3	0.21	114	2.8	58.7	0.78
4	Champion	25	9	0.1	46	1.9	47.4	0.18
5	Coamano	2	1	0.05	77	1.9	1.9	903.82
6	Daphne.Major	18	11	0.34	119	8	8	1.84
7	Daphne.Minor	24	0	0.08	93	6	12	0.34
8	Darwin	10	7	2.33	168	34.1	290.2	2.85
9	Eden	8	4	0.03	71	0.4	0.4	17.95
10	Enderby	2	2	0.18	112	2.6	50.2	0.1
11	Espanola	97	26	58.27	198	1.1	88.3	0.57
12	Fernandina	93	35	634.49	1494	4.3	95.3	4669.32
13	Gardner1	58	17	0.57	49	1.1	93.1	58.27
14	Gardner2	5	4	0.78	227	4.6	62.2	0.21
15	Genovesa	40	19	17.35	76	47.4	92.2	129.49
16	Isabela	347	89	4669.32	1707	0.7	28.1	634.49
17	Marchena	51	23	129.49	343	29.1	85.9	59.56
18	Onslow	2	2	0.01	25	3.3	45.9	0.1
19	Pinta	104	37	59.56	777	29.1	119.6	129.49
20	Pinzon	108	33	17.95	458	10.7	10.7	0.03
21	Las.Plazas	12	9	0.23	94	0.5	0.6	25.09
22	Rabida	70	30	4.89	367	4.4	24.4	572.33
23	SanCristobal	280	65	551.62	716	45.2	66.6	0.57
24	SanSalvador	237	81	572.33	906	0.2	19.8	4.89
25	SantaCruz	444	95	903.82	864	0.6	0	0.52
26	SantaFe	62	28	24.08	259	16.5	16.5	0.52
27	SantaMaria	285	73	170.92	640	2.6	49.2	0.1
28	Seymour	44	16	1.84	147	0.6	9.6	25.09
29	Tortuga	16	8	1.24	186	6.8	50.9	17.95
30	Wolf	21	12	2.85	253	34.1	254.7	2.33

Obs	_	Species	Endemics	Area	Elevation	Nearest	Scruz	Adjacent
1	Daphne.Minor	24	0	0.08	93	6	12	0.34
2	Coamano	2	1	0.05	77	1.9	1.9	903.82
3	Enderby	2	2	0.18	112	2.6	50.2	0.1
4	Onslow	2	2	0.01	25	3.3	45.9	0.1
5	Caldwell	3	3	0.21	114	2.8	58.7	0.78
6	Eden	8	4	0.03	71	0.4	0.4	17.95
7	Gardner2	5	4	0.78	227	4.6	62.2	0.21
8	Darwin	10	7	2.33	168	34.1	290.2	2.85
9	Tortuga	16	8	1.24	186	6.8	50.9	17.95
10	Champion	25	9	0.1	46	1.9	47.4	0.18
11	Las.Plazas	12	9	0.23	94	0.5	0.6	25.09
12	Daphne.Major	18	11	0.34	119	8	8	1.84
13	Wolf	21	12	2.85	253	34.1	254.7	2.33
14	Seymour	44	16	1.84	147	0.6	9.6	25.09
15	Gardner1	58	17	0.57	49	1.1	93.1	58.27
16	Genovesa	40	19	17.35	76	47.4	92.2	129.49
17	Bartolome	31	21	1.24	109	0.6	26.3	572.33
18	Baltra	58	23	25.09	346	0.6	0.6	1.84
19	Marchena	51	23	129.49	343	29.1	85.9	59.56
20	Espanola	97	26	58.27	198	1.1	88.3	0.57
21	SantaFe	62	28	24.08	259	16.5	16.5	0.52
22	Rabida	70	30	4.89	367	4.4	24.4	572.33
23	Pinzon	108	33	17.95	458	10.7	10.7	0.03
24	Fernandina	93	35	634.49	1494	4.3	95.3	4669.32
25	Pinta	104	37	59.56	777	29.1	119.6	129.49
26	SanCristobal	280	65	551.62	716	45.2	66.6	0.57
27	SantaMaria	285	73	170.92	640	2.6	49.2	0.1
28	SanSalvador	237	81	572.33	906	0.2	19.8	4.89
29	Isabela	347	89	4669.32	1707	0.7	28.1	634.49
30	SantaCruz	444	95	903.82	864	0.6	0	0.52

The MEANS Procedure

Analysis Variable : sspecies	
Mean	**Std Dev**
7.5440319	5.4127164

Obs	_	Species	Endemics	Area	Elevation	Nearest	Scruz	Adjacent	sspecies	pred	pred1
1	Daphne.Minor	24	0	0.08	93	6	12	0.34	4.8990	2.510	1.0
2	Coamano	2	1	0.05	77	1.9	1.9	903.82	1.4142	2.703	1.4
3	Enderby	2	2	0.18	112	2.6	50.2	0.1	1.4142	2.896	1.8
4	Onslow	2	2	0.01	25	3.3	45.9	0.1	1.4142	2.896	1.8
5	Caldwell	3	3	0.21	114	2.8	58.7	0.78	1.7321	3.089	2.2
6	Eden	8	4	0.03	71	0.4	0.4	17.95	2.8284	3.282	2.6
7	Gardner2	5	4	0.78	227	4.6	62.2	0.21	2.2361	3.282	2.6
8	Darwin	10	7	2.33	168	34.1	290.2	2.85	3.1623	3.861	3.8
9	Tortuga	16	8	1.24	186	6.8	50.9	17.95	4.0000	4.054	4.2
10	Champion	25	9	0.1	46	1.9	47.4	0.18	5.0000	4.247	4.6
11	Las.Plazas	12	9	0.23	94	0.5	0.6	25.09	3.4641	4.247	4.6
12	Daphne.Major	18	11	0.34	119	8	8	1.84	4.2426	4.633	5.4
13	Wolf	21	12	2.85	253	34.1	254.7	2.33	4.5826	4.826	5.8
14	Seymour	44	16	1.84	147	0.6	9.6	25.09	6.6332	5.598	7.4
15	Gardner1	58	17	0.57	49	1.1	93.1	58.27	7.6158	5.791	7.8
16	Genovesa	40	19	17.35	76	47.4	92.2	129.49	6.3246	6.177	8.6
17	Bartolome	31	21	1.24	109	0.6	26.3	572.33	5.5678	6.563	9.4
18	Baltra	58	23	25.09	346	0.6	0.6	1.84	7.6158	6.949	10.2
19	Marchena	51	23	129.49	343	29.1	85.9	59.56	7.1414	6.949	10.2
20	Espanola	97	26	58.27	198	1.1	88.3	0.57	9.8489	7.528	11.4
21	SantaFe	62	28	24.08	259	16.5	16.5	0.52	7.8740	7.914	12.2
22	Rabida	70	30	4.89	367	4.4	24.4	572.33	8.3666	8.300	13.0
23	Pinzon	108	33	17.95	458	10.7	10.7	0.03	10.3923	8.879	14.2
24	Fernandina	93	35	634.49	1494	4.3	95.3	4669.32	9.6437	9.265	15.0
25	Pinta	104	37	59.56	777	29.1	119.6	129.49	10.1980	9.651	15.8
26	SanCristobal	280	65	551.62	716	45.2	66.6	0.57	16.7332	15.055	27.0
27	SantaMaria	285	73	170.92	640	2.6	49.2	0.1	16.8819	16.599	30.2
28	SanSalvador	237	81	572.33	906	0.2	19.8	4.89	15.3948	18.143	33.4
29	Isabela	347	89	4669.32	1707	0.7	28.1	634.49	18.6279	19.687	36.6
30	SantaCruz	444	95	903.82	864	0.6	0	0.52	21.0713	20.845	39.0

The MEANS Procedure

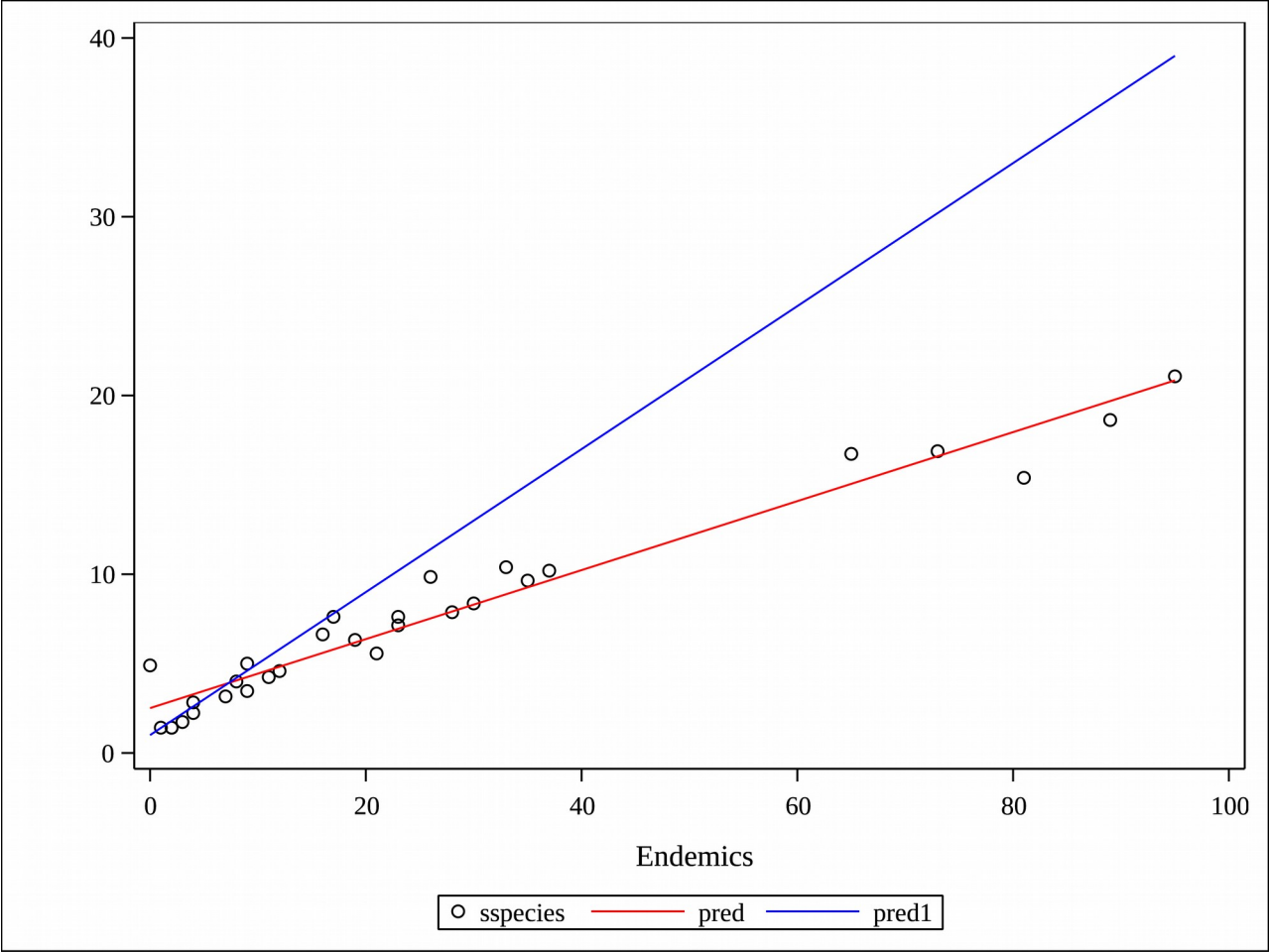| Variable	Mean	Std Dev
pred	7.5473000	5.2749045
pred1	11.4400000	10.9324446

Code: Warren_Jesscia_Hw1.sas

```
PROC IMPORT out =gala
DATAFILE="/folders/myfolders/ARM/gala.csv"
DBMS = CSV replace;
RUN;
proc print data=gala;
run;
proc sort data=gala out=gala2;
by endemics;
run;
proc print data= gala2;
run;
data squareroots;
set gala2;
        sspecies = sqrt(species);
run;
Proc means Data= squareroots mean std;
variable sspecies;
output;
run;
data gala3;
set squareroots;
    pred = 2.51 + 0.193*endemics;
    pred1 = 1+0.4*endemics;
run;
proc print data = gala3;
Proc means Data = gala3 mean std;
variable pred pred1;
output;
run;
proc sgplot data=gala3;
scatter x=endemics y=sspecies;
series x=endemics y=pred/lineattrs=(color=red);
series x=endemics y=pred1/lineattrs=(color=blue);
run;
data gala4;
set gala3;
    rez= pred-sspecies;
    rez1=pred1-sspecies;
run;
proc print data=gala4;
proc univariate data=gala4;
var rez;
output out=gala4_rez uss=uss_rez;
run;
```

```
proc univariate data=gala4;
var rez1;
output out=gala4_rez1 uss= uss_rez1;
run;
```

Obs	_	Species	Endemics	Area	Elevation	Nearest	Scruz	Adjacent
1	Daphne.Minor	24	0	0.08	93	6	12	0.34
2	Coamano	2	1	0.05	77	1.9	1.9	903.82
3	Enderby	2	2	0.18	112	2.6	50.2	0.1
4	Onslow	2	2	0.01	25	3.3	45.9	0.1
5	Caldwell	3	3	0.21	114	2.8	58.7	0.78
6	Eden	8	4	0.03	71	0.4	0.4	17.95
7	Gardner2	5	4	0.78	227	4.6	62.2	0.21
8	Darwin	10	7	2.33	168	34.1	290.2	2.85
9	Tortuga	16	8	1.24	186	6.8	50.9	17.95
10	Champion	25	9	0.1	46	1.9	47.4	0.18
11	Las.Plazas	12	9	0.23	94	0.5	0.6	25.09
12	Daphne.Major	18	11	0.34	119	8	8	1.84
13	Wolf	21	12	2.85	253	34.1	254.7	2.33
14	Seymour	44	16	1.84	147	0.6	9.6	25.09
15	Gardner1	58	17	0.57	49	1.1	93.1	58.27
16	Genovesa	40	19	17.35	76	47.4	92.2	129.49
17	Bartolome	31	21	1.24	109	0.6	26.3	572.33
18	Baltra	58	23	25.09	346	0.6	0.6	1.84
19	Marchena	51	23	129.49	343	29.1	85.9	59.56
20	Espanola	97	26	58.27	198	1.1	88.3	0.57
21	SantaFe	62	28	24.08	259	16.5	16.5	0.52
22	Rabida	70	30	4.89	367	4.4	24.4	572.33
23	Pinzon	108	33	17.95	458	10.7	10.7	0.03
24	Fernandina	93	35	634.49	1494	4.3	95.3	4669.32
25	Pinta	104	37	59.56	777	29.1	119.6	129.49
26	SanCristobal	280	65	551.62	716	45.2	66.6	0.57
27	SantaMaria	285	73	170.92	640	2.6	49.2	0.1
28	SanSalvador	237	81	572.33	906	0.2	19.8	4.89
29	Isabela	347	89	4669.32	1707	0.7	28.1	634.49
30	SantaCruz	444	95	903.82	864	0.6	0	0.52

Obs	sspecies	pred	pred1	rez	rez1
1	4.8990	2.510	1.0	-2.38898	-3.8990

2	1.4142	2.703	1.4	1.28879	-0.0142
3	1.4142	2.896	1.8	1.48179	0.3858
4	1.4142	2.896	1.8	1.48179	0.3858
5	1.7321	3.089	2.2	1.35695	0.4679
6	2.8284	3.282	2.6	0.45357	-0.2284
7	2.2361	3.282	2.6	1.04593	0.3639
8	3.1623	3.861	3.8	0.69872	0.6377
9	4.0000	4.054	4.2	0.05400	0.2000
10	5.0000	4.247	4.6	-0.75300	-0.4000
11	3.4641	4.247	4.6	0.78290	1.1359
12	4.2426	4.633	5.4	0.39036	1.1574
13	4.5826	4.826	5.8	0.24342	1.2174
14	6.6332	5.598	7.4	-1.03525	0.7668
15	7.6158	5.791	7.8	-1.82477	0.1842
16	6.3246	6.177	8.6	-0.14756	2.2754
17	5.5678	6.563	9.4	0.99524	3.8322
18	7.6158	6.949	10.2	-0.66677	2.5842
19	7.1414	6.949	10.2	-0.19243	3.0586
20	9.8489	7.528	11.4	-2.32086	1.5511
21	7.8740	7.914	12.2	0.03999	4.3260
22	8.3666	8.300	13.0	-0.06660	4.6334
23	10.3923	8.879	14.2	-1.51330	3.8077
24	9.6437	9.265	15.0	-0.37865	5.3563
25	10.1980	9.651	15.8	-0.54704	5.6020
26	16.7332	15.055	27.0	-1.67820	10.2668
27	16.8819	16.599	30.2	-0.28294	13.3181
28	15.3948	18.143	33.4	2.74820	18.0052
29	18.6279	19.687	36.6	1.05906	17.9721
30	21.0713	20.845	39.0	-0.22631	17.9287

Moments			
N	30	Sum Weights	30
Mean	0.00326808	Sum Observations	0.0980424
Std Deviation	1.20952189	Variance	1.46294319
Skewness	-0.1400357	Kurtosis	-0.0734091

Uncorrected SS	42.425673	Corrected SS	42.4253526
Coeff Variation	37010.1676	Std Error Mean	0.22082747

Basic Statistical Measures			
Location		Variability	
Mean	0.00327	Std Deviation	1.20952
Median	-0.01330	Variance	1.46294
Mode	1.48179	Range	5.13718
		Interquartile Range	1.66201

Tests for Location: Mu0=0				
Test		Statistic	p Value	
Student's t	t	0.014799	Pr > |t|	0.9883
Sign	M	0	Pr >= |M|	1.0000
Signed Rank	S	4.5	Pr >= |S|	0.9281

Quantiles (Definition 5)	
Level	Quantile
100% Max	2.7481957
99%	2.7481957
95%	1.4817864
90%	1.4193678
75% Q3	0.9952356
50% Median	-0.0133041
25% Q1	-0.6667731
10%	-1.7514868
5%	-2.3208578
1%	-2.3889795
0% Min	-2.3889795

Extreme Observations			
Lowest		Highest	
Value	Obs	Value	Obs

-2.38898	1	1.28879	2
-2.32086	20	1.35695	5
-1.82477	15	1.48179	3
-1.67820	26	1.48179	4
-1.51330	23	2.74820	28

Moments			
N	30	Sum Weights	30
Mean	3.89596808	Sum Observations	116.879042
Std Deviation	5.78446574	Variance	33.4600439
Skewness	1.59643356	Kurtosis	1.70757128
Uncorrected SS	1425.69829	Corrected SS	970.341272
Coeff Variation	148.47313	Std Error Mean	1.05609412

Basic Statistical Measures			
Location		Variability	
Mean	3.895968	Std Deviation	5.78447
Median	1.384283	Variance	33.46004
Mode	0.385786	Range	21.90418
		Interquartile Range	4.24761

Tests for Location: Mu0=0				
Test	Statistic		p Value	
Student's t	t	3.689035	Pr > |t|	0.0009
Sign	M	11	Pr >= |M|	<.0001
Signed Rank	S	198.5	Pr >= |S|	<.0001

Quantiles (Definition 5)	
Level	Quantile
100% Max	18.005196
99%	18.005196
95%	17.972064
90%	15.623375
75% Q3	4.633400
50% Median	1.384283

25% Q1	0.385786
10%	-0.121320
5%	-0.400000
1%	-3.898979
0% Min	-3.898979

Extreme Observations			
Lowest		**Highest**	
Value	**Obs**	**Value**	**Obs**
-3.8989795	1	10.2668	26
-0.4000000	10	13.3181	27
-0.2284271	6	17.9287	30
-0.0142136	2	17.9721	29
0.1842269	15	18.0052	28