Term 1231 – STAT 3311 – Chapter 15 Excel Example 1 (Sheet 1)
Dr. Hani Kabajah

Model: y = y(x1)

x1	x2	y
100	4	9.3
50	3	4.8
100	4	8.9
100	2	6.5
50	2	4.2
80	2	6.2
75	3	7.4
65	4	6
90	3	7.6
90	2	6.1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.814905707
R Square	0.664071312
Adjusted R Square	0.622080226
Standard Error	1.001791873
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	15.87130435	15.87130435	15.81457814	0.004080177
Residual	8	8.028695652	1.003586957		
Total	9	23.9			

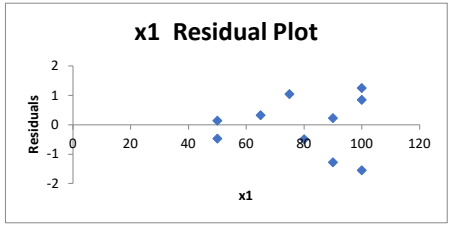
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	1.273913043	1.400744525	0.909454237	0.389687361	-1.956209623	4.50403571	-3.426127389	5.973953476
x1	0.067826087	0.017055637	3.976754725	0.004080177	0.028495716	0.107156458	0.010597817	0.125054357

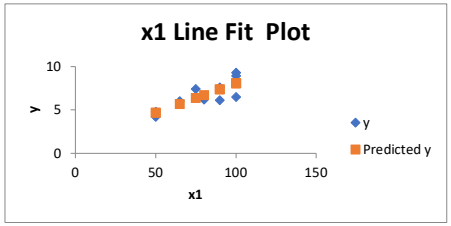
RESIDUAL OUTPUT

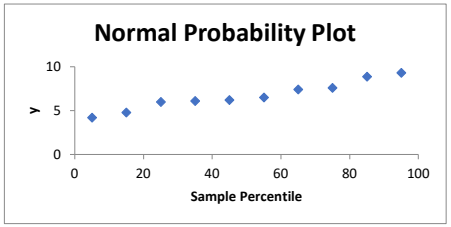
Observation	*Predicted y*	*Residuals*	*Standard Residuals*
1	8.056521739	1.243478261	1.316548778
2	4.665217391	0.134782609	0.14270284
3	8.056521739	0.843478261	0.893043577
4	8.056521739	-1.556521739	-1.647987631
5	4.665217391	-0.465217391	-0.492554962
6	6.7	-0.5	-0.529381502
7	6.360869565	1.039130435	1.10019286
8	5.682608696	0.317391304	0.336042171
9	7.37826087	0.22173913	0.234769188
10	7.37826087	-1.27826087	-1.353375317

PROBABILITY OUTPUT

Percentile	*y*
5	4.2
15	4.8
25	6
35	6.1
45	6.2
55	6.5
65	7.4
75	7.6
85	8.9
95	9.3







Term 1231 – STAT 3311 – Chapter 15 Excel Example 1 (Sheet 2)
Dr. Hani Kabajah

Model: x1 = x1(y)

x1	x2	y
100	4	9.3
50	3	4.8
100	4	8.9
100	2	6.5
50	2	4.2
80	2	6.2
75	3	7.4
65	4	6
90	3	7.6
90	2	6.1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.814905707
R Square	0.664071312
Adjusted R Square	0.622080226
Standard Error	12.03616413
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2291.046025	2291.046025	15.81457814	0.004080177
Residual	8	1158.953975	144.8692469		
Total	9	3450			

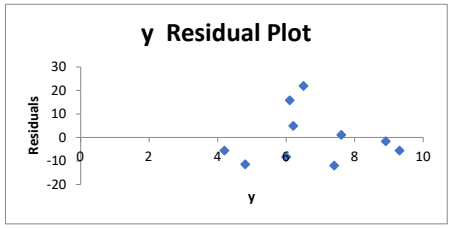
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	14.40167364	16.92886667	0.850716939	0.419658836	-24.63636291	53.43971019	-42.40123113	71.20457841
y	9.790794979	2.462006248	3.976754725	0.004080177	4.113398391	15.46819157	1.529810406	18.05177955

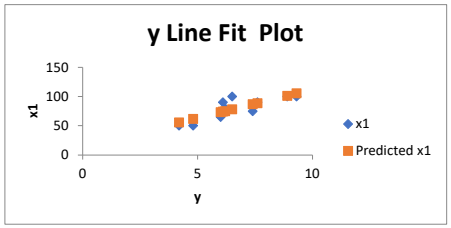
RESIDUAL OUTPUT

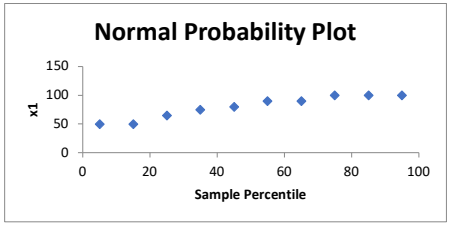
Observation	*Predicted x1*	*Residuals*	*Standard Residuals*
1	105.4560669	-5.456066946	-0.480803755
2	61.39748954	-11.39748954	-1.004378396
3	101.539749	-1.539748954	-0.135686949
4	78.041841	21.958159	1.935013884
5	55.52301255	-5.523012552	-0.486703187
6	75.10460251	4.89539749	0.431396007
7	86.85355649	-11.85355649	-1.04456828
8	73.14644351	-8.146443515	-0.717887201
9	88.81171548	1.188284519	0.104714928
10	74.12552301	15.87447699	1.398902949

PROBABILITY OUTPUT

Percentile	*x1*
5	50
15	50
25	65
35	75
45	80
55	90
65	90
75	100
85	100
95	100







Term 1231 – STAT 3311 – Chapter 15 Excel Example 1 (Sheet 3)
Dr. Hani Kabajah

Model: y = y(x2)

x1	x2	y
100	4	9.3
50	3	4.8
100	4	8.9
100	2	6.5
50	2	4.2
80	2	6.2
75	3	7.4
65	4	6
90	3	7.6
90	2	6.1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.615181966
R Square	0.378448851
Adjusted R Square	0.300754957
Standard Error	1.362675331
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	9.044927536	9.044927536	4.87102439	0.058349789
Residual	8	14.85507246	1.856884058		
Total	9	23.9			

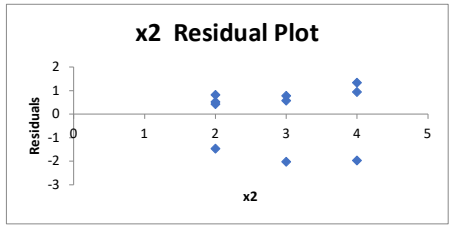
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	3.379710145	1.564907041	2.15968748	0.062819979	-0.228971963	6.988392253	-1.871159116	8.630579406
x2	1.144927536	0.518761633	2.207039735	0.058349789	-0.051338934	2.341194006	-0.595718674	2.885573747

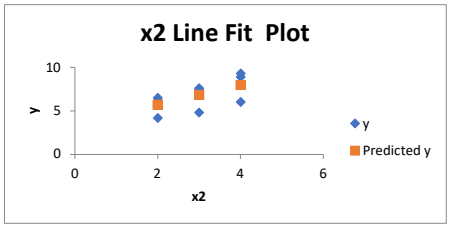
RESIDUAL OUTPUT

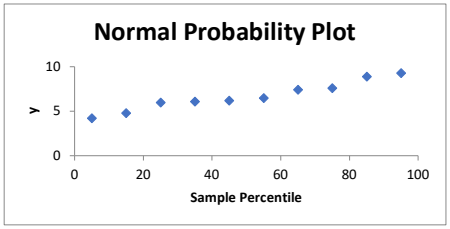
Observation	*Predicted y*	*Residuals*	*Standard Residuals*
1	7.95942029	1.34057971	1.043461691
2	6.814492754	-2.014492754	-1.568012704
3	7.95942029	0.94057971	0.732115284
4	5.669565217	0.830434783	0.646382215
5	5.669565217	-1.469565217	-1.143859627
6	5.669565217	0.530434783	0.41287241
7	6.814492754	0.585507246	0.455738944
8	7.95942029	-1.95942029	-1.525146169
9	6.814492754	0.785507246	0.611412148
10	5.669565217	0.430434783	0.335035808

PROBABILITY OUTPUT

Percentile	*y*
5	4.2
15	4.8
25	6
35	6.1
45	6.2
55	6.5
65	7.4
75	7.6
85	8.9
95	9.3







Term 1231 – STAT 3311 – Chapter 15 Excel Example 1 (Sheet 4)
Dr. Hani Kabajah

Model: x2 = x2(y)

x1	x2	y
100	4	9.3
50	3	4.8
100	4	8.9
100	2	6.5
50	2	4.2
80	2	6.2
75	3	7.4
65	4	6
90	3	7.6
90	2	6.1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.615181966
R Square	0.378448851
Adjusted R Square	0.300754957
Standard Error	0.732180214
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	2.611297071	2.611297071	4.87102439	0.058349789
Residual	8	4.288702929	0.536087866		
Total	9	6.9			

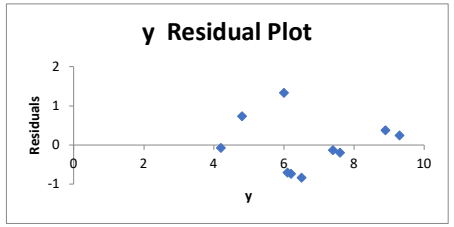
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	0.685355649	1.029811583	0.665515576	0.524440708	-1.68939412	3.060105417	-2.77006109	4.140772387
y	0.330543933	0.149768003	2.207039735	0.058349789	-0.014821701	0.675909567	-0.171985726	0.833073592

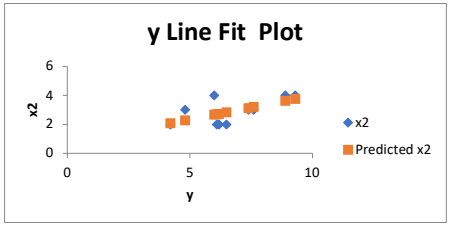
RESIDUAL OUTPUT

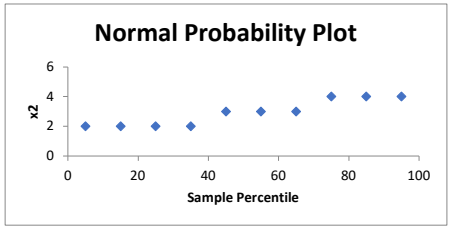
Observation	*Predicted x2*	*Residuals*	*Standard Residuals*
1	3.759414226	0.240585774	0.34852041
2	2.271966527	0.728033473	1.054653067
3	3.627196653	0.372803347	0.540055105
4	2.833891213	-0.833891213	-1.208002047
5	2.073640167	-0.073640167	-0.106677552
6	2.734728033	-0.734728033	-1.064351026
7	3.131380753	-0.131380753	-0.19032245
8	2.668619247	1.331380753	1.928681643
9	3.19748954	-0.19748954	-0.286089797
10	2.70167364	-0.70167364	-1.016467352

PROBABILITY OUTPUT

Percentile	*x2*
5	2
15	2
25	2
35	2
45	3
55	3
65	3
75	4
85	4
95	4







Term 1231 – STAT 3311 – Chapter 15 Excel Example 1 (Sheet 5)
Dr. Hani Kabajah

Model: y = y(x1,x2)

x1	x2	y
100	4	9.3
50	3	4.8
100	4	8.9
100	2	6.5
50	2	4.2
80	2	6.2
75	3	7.4
65	4	6
90	3	7.6
90	2	6.1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.950678166
R Square	0.903788975
Adjusted R Square	0.876300111
Standard Error	0.573142152
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	21.60055651	10.80027826	32.87836743	0.00027624
Residual	7	2.299443486	0.328491927		
Total	9	23.9			

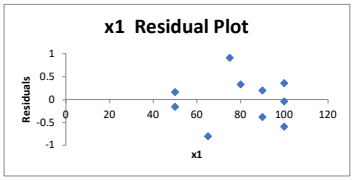
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	-0.868701467	0.951547725	-0.912935257	0.391634304	-3.118754293	1.38135136	-4.198626836	2.461223902
x1	0.061134599	0.009888495	6.182396959	0.000452961	0.037752025	0.084517173	0.026529977	0.09573922
x2	0.923425367	0.221113461	4.176251251	0.004156622	0.400575115	1.446275618	0.149642504	1.697208229

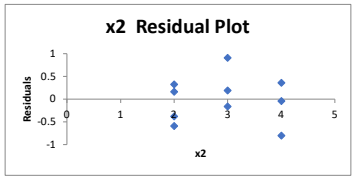
RESIDUAL OUTPUT

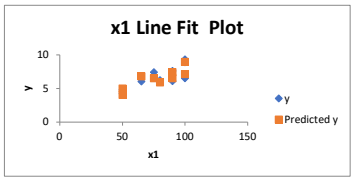
Observation	*Predicted y*	*Residuals*	*Standard Residuals*
1	8.938459879	0.361540121	0.715264027
2	4.958304573	-0.158304573	-0.313186725
3	8.938459879	-0.038459879	-0.076088286
4	7.091609146	-0.591609146	-1.170428164
5	4.034879206	0.165120794	0.326671805
6	5.86891717	0.33108283	0.655007908
7	6.486669543	0.913330457	1.806915424
8	6.798748921	-0.798748921	-1.580229516
9	7.403688525	0.196311475	0.38837885
10	6.480263158	-0.380263158	-0.752305324

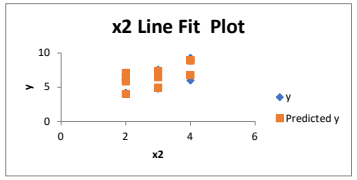
PROBABILITY OUTPUT

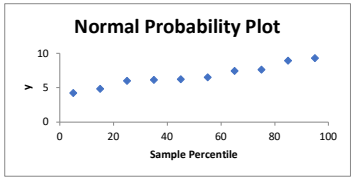
Percentile	*y*
5	4.2
15	4.8
25	6
35	6.1
45	6.2
55	6.5
65	7.4
75	7.6
85	8.9
95	9.3











Term 1231 – STAT 3311 – Chapter 15 Excel Example 1 (Sheet 6)
Dr. Hani Kabajah

Model: x2 = x2(x1)

x1	x2	y
100	4	9.3
50	3	4.8
100	4	8.9
100	2	6.5
50	2	4.2
80	2	6.2
75	3	7.4
65	4	6
90	3	7.6
90	2	6.1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.162033911
R Square	0.026254988
Adjusted R Square	-0.095463138
Standard Error	0.916436071
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	0.18115942	0.18115942	0.215703192	0.654711196
Residual	8	6.71884058	0.839855072		
Total	9	6.9			

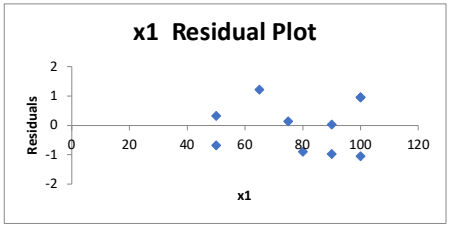
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	2.320289855	1.281396709	1.810750596	0.107766813	-0.634616255	5.275195965	-1.979292429	6.619872139
x1	0.007246377	0.015602444	0.464438578	0.654711196	-0.028732923	0.043225677	-0.045105865	0.059598619

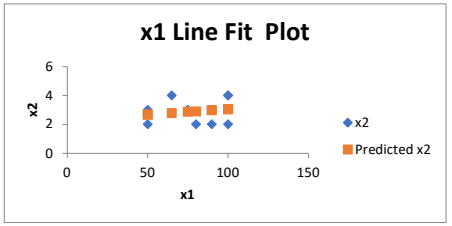
RESIDUAL OUTPUT

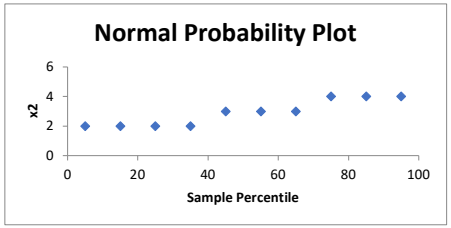
Observation	*Predicted x2*	*Residuals*	*Standard Residuals*
1	3.044927536	0.955072464	1.105376966
2	2.682608696	0.317391304	0.367340752
3	3.044927536	0.955072464	1.105376966
4	3.044927536	-1.044927536	-1.209372978
5	2.682608696	-0.682608696	-0.79003422
6	2.9	-0.9	-1.041637474
7	2.863768116	0.136231884	0.157671373
8	2.791304348	1.208695652	1.398914096
9	2.972463768	0.027536232	0.031869746
10	2.972463768	-0.972463768	-1.125505226

PROBABILITY OUTPUT

Percentile	*x2*
5	2
15	2
25	2
35	2
45	3
55	3
65	3
75	4
85	4
95	4







Term 1231 – STAT 3311 – Chapter 15 Excel Example 1 (Sheet 7)
Dr. Hani Kabajah

Model: x1 = x1(x2)

x1	x2	y
100	4	9.3
50	3	4.8
100	4	8.9
100	2	6.5
50	2	4.2
80	2	6.2
75	3	7.4
65	4	6
90	3	7.6
90	2	6.1

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.162033911
R Square	0.026254988
Adjusted R Square	-0.095463138
Standard Error	20.49213352
Observations	10

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	90.57971014	90.57971014	0.215703192	0.654711196
Residual	8	3359.42029	419.9275362		
Total	9	3450			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 99.0%*	*Upper 99.0%*
Intercept	69.49275362	23.53332691	2.952950677	0.018342763	15.22480446	123.7607028	-9.470673345	148.4561806
x2	3.623188406	7.801221906	0.464438578	0.654711196	-14.36646157	21.61283838	-22.55293275	29.79930956

RESIDUAL OUTPUT

Observation	*Predicted x1*	*Residuals*	*Standard Residuals*
1	83.98550725	16.01449275	0.828900252
2	80.36231884	-30.36231884	-1.571534867
3	83.98550725	16.01449275	0.828900252
4	76.73913043	23.26086957	1.203968239
5	76.73913043	-26.73913043	-1.384000873
6	76.73913043	3.260869565	0.168780594
7	80.36231884	-5.362318841	-0.277550311
8	83.98550725	-18.98550725	-0.982678127
9	80.36231884	9.637681159	0.498840423
10	76.73913043	13.26086957	0.686374417

PROBABILITY OUTPUT

Percentile	*x1*
5	50
15	50
25	65
35	75
45	80
55	90
65	90
75	100
85	100
95	100