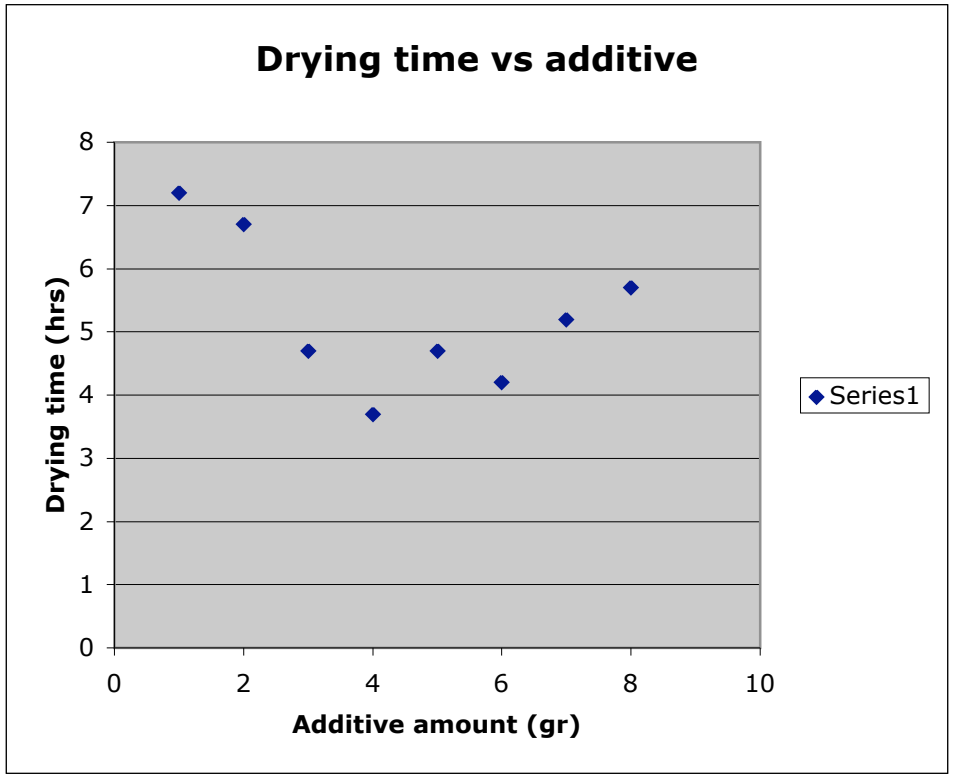
Quadratic Regression
Example taken from:
Fruend, John E. Modern Elementary Statistics. 11th edition.
Upper Saddle River, NJ: Pearson Education, 2004: 430.

Amount of a	Drying time (hrs)
1	7.2
2	6.7
3	4.7
4	3.7
5	4.7
6	4.2
7	5.2
8	5.7

Scatter plot



Data prepared for quadratic fit
using multiple regression

A denotes the amount of additive
A^2 denotes the amount of additive squared
T denotes the drying time

A	A^2	T
1	1	7.2
2	4	6.7
3	9	4.7
4	16	3.7
5	25	4.7
6	36	4.2
7	49	5.2
8	64	5.7

To perform the multiple regression

Data Analysis -> Regression

Input Y Range: highlight cells C11 to C18

Input X Range: highlight cells A11 to B18

Labels: ON

New workbook: ON

Residual plots: ON

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.92361539
R Square	0.85306539
Adjusted R Sq	0.79429154
Standard Erro	0.54799418
Observations	8

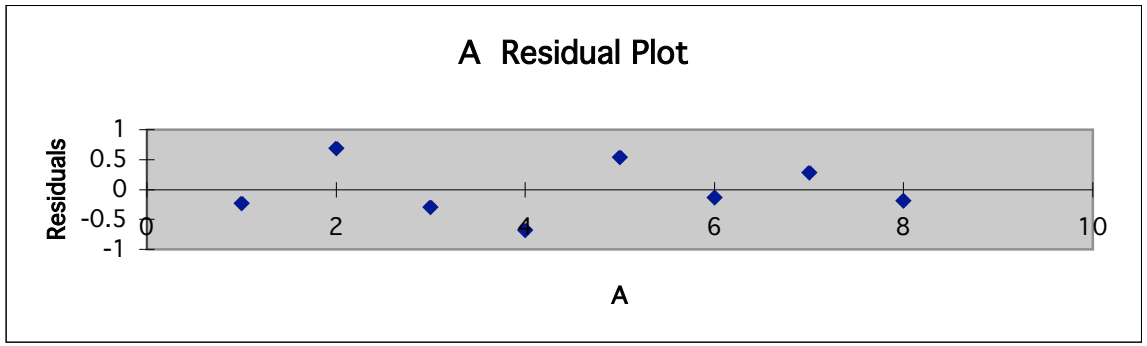
ANOVA

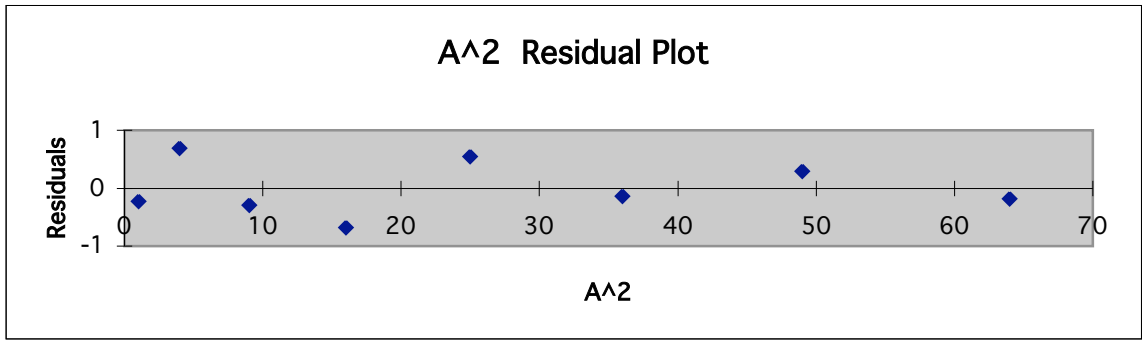
	df	*SS*	*MS*	*F*	*Significance F*
Regression	2	8.7172619	4.35863095	14.5143707	0.00827581
Residual	5	1.5014881	0.30029762		
Total	7	10.21875			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	9.24464286	0.76453114	12.0919114	6.8316E-05	7.2793562	11.2099295	7.2793562	11.2099295
A	-2.01488095	0.38979007	-5.16914393	0.00355743	-3.01686658	-1.01289533	-3.01686658	-1.01289533
A^2	0.19940476	0.04227867	4.716439	0.0052593	0.09072416	0.30808536	0.09072416	0.30808536

RESIDUAL OUTPUT

Observation	*Predicted T*	*Residuals*
1	7.42916667	-0.22916667
2	6.0125	0.6875
3	4.99464286	-0.29464286
4	4.37559524	-0.67559524
5	4.15535714	0.54464286
6	4.33392857	-0.13392857
7	4.91130952	0.28869048
8	5.8875	-0.1875


A Residual Plot
Residuals
1
0.5
0
-0.5
-1
0
2
4
6
8
10
A


A^2 Residual Plot
Residuals
1
0
-1
0
10
20
30
40
50
60
70
A^2