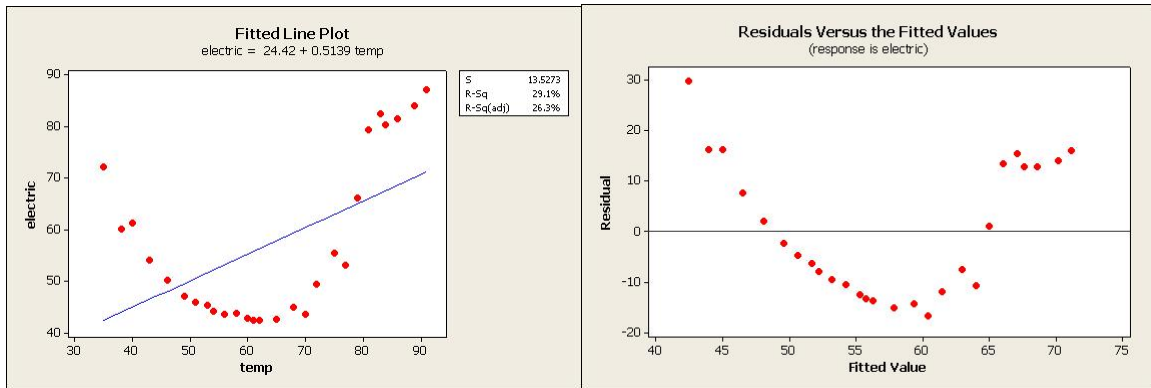


# Example: Electrical Consumption vs. Temperature

## Linear Regression



### Regression Analysis: electric versus temp

The regression equation is  
 $electric = 24.4 + 0.514 \text{ temp}$

Predictor	Coef	SE Coef	T	P
Constant	24.42	10.57	2.31	0.029
temp	0.5139	0.1603	3.21	0.004

S = 13.5273    R-Sq = 29.1%    R-Sq(adj) = 26.3%

### Analysis of Variance

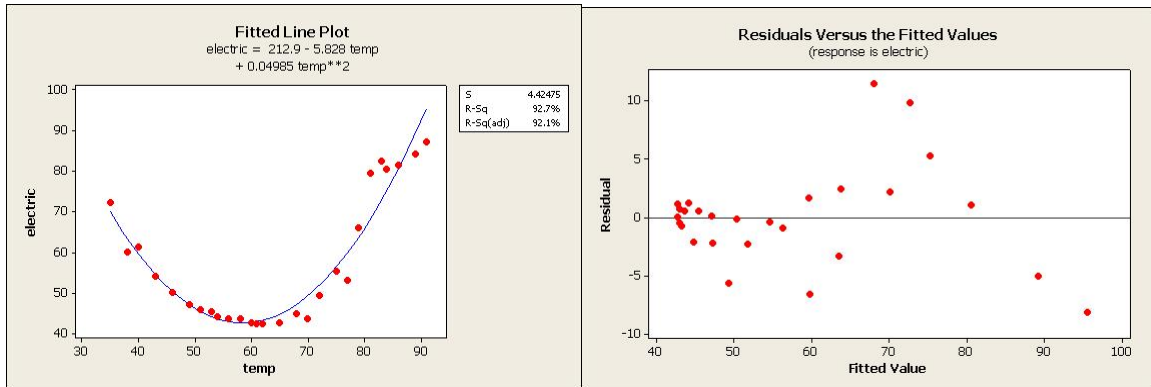
Source	DF	SS	MS	F	P
Regression	1	1880.7	1880.7	10.28	0.004
Residual Error	25	4574.7	183.0		
Total	26	6455.5			

### Unusual Observations

Obs	temp	electric	Fit	SE Fit	Residual	St Resid
1	35.0	72.16	42.40	5.32	29.76	2.39R

R denotes an observation with a large standardized residual.

## Quadratic Regression



Regression Analysis: electric versus temp, temp2

The regression equation is

$$electric = 213 - 5.83 \text{ temp} + 0.0499 \text{ temp}^2$$

Predictor	Coef	SE Coef	T	P
Constant	212.93	13.47	15.81	0.000
temp	-5.8278	0.4411	-13.21	0.000
temp**2	0.049854	0.003443	14.48	0.000

S = 4.42475    R-Sq = 92.7%    R-Sq(adj) = 92.1%

Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	5985.6	2992.8	152.86	0.000
Residual Error	24	469.9	19.6		
Total	26	6455.5			

Source	DF	Seq SS
temp	1	1880.7
temp2	1	4104.8

Unusual Observations

Obs	temp	electric	Fit	SE Fit	Residual	St Resid
1	35.0	72.164	70.032	2.582	2.132	0.59 X
22	81.0	79.468	67.974	1.243	11.494	2.71R
23	83.0	82.469	72.671	1.369	9.798	2.33R
27	91.0	87.265	95.445	2.356	-8.180	-2.18R

R denotes an observation with a large standardized residual.

X denotes an observation whose X value gives it large influence.