

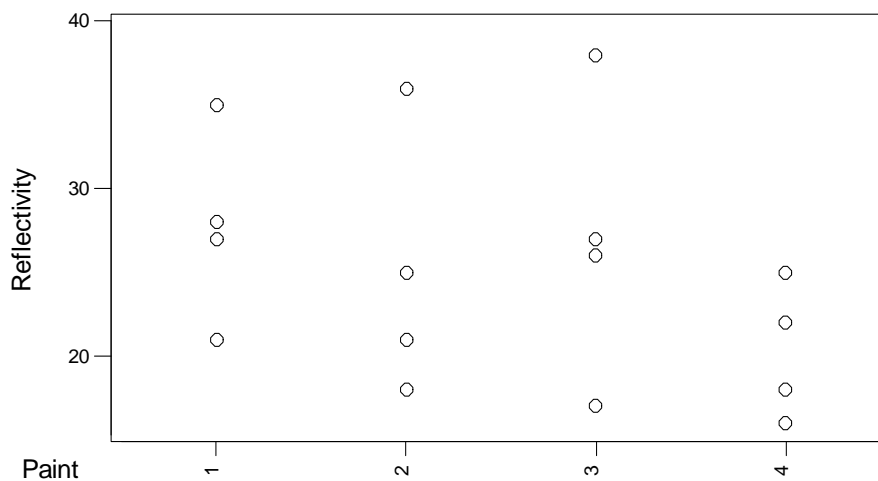
Single Factor ANOVA Example

Four different paints (P_1, P_2, P_3, P_4) were randomly assigned to 16 sections (6 feet each) of a highway and the percentage decrease in reflectivity was observed 6 months later. The results are given in the table below.

Paint					n_i	\bar{y}_i	s_i
P_1	28	35	27	21	4	27.75	
P_2	21	36	25	18	4	25	
P_3	26	38	27	17	4	27	
P_4	16	25	22	18	4	20.25	

First look at a plot of the data and the descriptive statistics.

Dotplots of Reflectivity by Paint



Descriptive Statistics: Reflectivity by Paint

Var	Paint	N	Mean	Med	TrMn	StDev
Refl	1	4	27.75	27.50	27.75	5.74
	2	4	25.00	23.00	25.00	7.87
	3	4	27.00	26.50	27.00	8.60
	4	4	20.25	20.00	20.25	4.03

Var	Paint	SE Mean	Min	Max	Q1	Q3
Refl	1	2.87	21.00	35.00	22.50	33.25
	2	3.94	18.00	36.00	18.75	33.25
	3	4.30	17.00	38.00	19.25	35.25
	4	2.02	16.00	25.00	16.50	24.25

ANOVA Table

Analysis of Variance for Reflecti

Source	DF	SS	MS	F	P
Paint	3	136.5	45.5	0.98	0.433
Error	12	555.5	46.3		
Total	15	692.0			

Individual 95% CIs For Mean
Based on Pooled StDev

Level	N	Mean	StDev	CI Lower	CI Upper
1	4	27.750	5.737	21.000	34.500
2	4	25.000	7.874	17.126	32.874
3	4	27.000	8.602	18.398	35.602
4	4	20.250	4.031	16.219	24.281

Pooled StDev = 6.804

Residual plot

