

R Code For One-Way ANOVA

```
> data.rate = read.table("D:/stat481/EtchRate.txt", header=TRUE, sep="\t")
```

```
> Power = factor(data.rate[,1])
```

```
> Power
```

```
[1] 160 160 160 160 160 180 180 180 180 180 200 200 200 200 200 220 220 220 220
```

```
[20] 220
```

```
Levels: 160 180 200 220
```

```
> is.factor(Power)
```

```
[1] TRUE
```

```
> Rate = data.rate[,2]
```

```
> rate.lm = lm(Rate ~ Power)
```

```
> summary(rate.lm)
```

Call:

```
lm(formula = Rate ~ Power)
```

Residuals:

Min	1Q	Median	3Q	Max
-25.4	-13.0	2.8	13.2	25.6

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	551.200	8.169	67.471	< 2e-16	***
Power180	36.200	11.553	3.133	0.00642	**
Power200	74.200	11.553	6.422	8.44e-06	***
Power220	155.800	11.553	13.485	3.73e-10	***

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Residual standard error: 18.27 on 16 degrees of freedom

Multiple R-Squared: 0.9261, Adjusted R-squared: 0.9122

F-statistic: 66.8 on 3 and 16 DF, p-value: 2.883e-09

```
> anova(rate.lm)
```

Analysis of Variance Table

Response: Rate

	Df	Sum Sq	Mean Sq	F value	Pr(>F)	
Power	3	66871	22290	66.797	2.883e-09	***
Residuals	16	5339	334			

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1