

R Workshop 3

```
data(pressure)
str(pressure)
summary(pressure)
pressure$temperature <-
pressure$temperature + 273.15
pressure$pressure = pressure$pressure * .1333
summary(pressure)
```

```
pres = pressure$pressure  
temp = pressure$temperature  
rm(pressure)  
ls()
```

```
par(mfrow=c(1,4))
```

```
plot(pres ~ temp, main="Vapor Pressure\nof  
Mercury",
```

```
+           xlab="Temperature (degrees Kelvin)",  
+           ylab="Pressure (kPascals)")
```

```
plot(pres ~ temp, main="Vapor Pressure\nof  
Mercury",  
+       xlab="Temperature (degrees Kelvin)",  
+       ylab="Pressure (kPascals)", log="y")
```

```
plot(pres ~ temp, main="Vapor Pressure\nof  
Mercury",  
+       xlab="Temperature (degrees Kelvin)",  
+       ylab="Pressure (kPascals)", log="xy")
```

```
plot(pres ~ temp, main="Vapor Pressure\nof  
Mercury",  
+       xlab="Temperature (degrees Kelvin)",  
+       ylab="Pressure (kPascals)", log="x")
```

```
par(mfrow=c(1,2))          # one row of two graphs
lm.out1 = lm(log(pres) ~ temp) # the exponential
model
lm.out1
```

```
plot(lm.out1$fitted, lm.out1$resid) # evaluated via
a residual plot
```

```
lm.out2 = lm(log(pres) ~ log(temp)) # the power
model
lm.out2
```

```
plot(lm.out2$fitted, lm.out2$resid) # evaluated via
a residual plot
```

```
ls()  
options(show.signif.stars=F)  
# turn off annoying significance stars  
lm.out3 = lm(pres ~ temp + I(temp^2) + I  
(temp^3))  
summary(lm.out3)
```

```
par(mfrow=c(1,1))  
plot(lm.out3$fitted, lm.out3$resid)
```