

# Doing Stats with R

mf

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## Simple OLS Regression: lm function

*#You'll need to load the UsingR package for this data*

```
data(diamond)
```

```
y <- diamond$price; x <- diamond$carat;
```

```
fit <- lm(y ~ x)
```

```
fit
```

```
##
```

```
## Call:
```

```
## lm(formula = y ~ x)
```

```
##
```

```
## Coefficients:
```

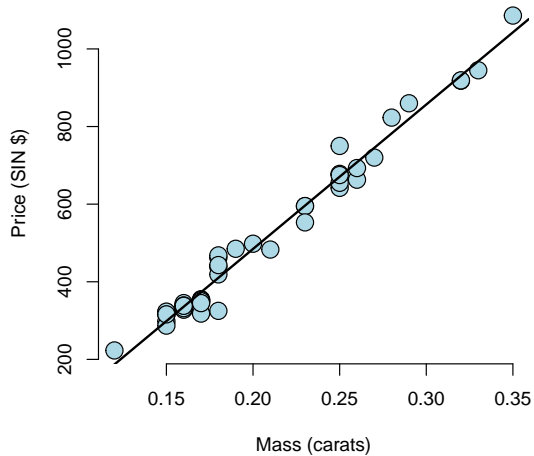
```
## (Intercept)                x
```

```
##      -259.6      3721.0
```

Plot that graph:

```
plot(diamond$carat, diamond$price,  
     xlab = "Mass (carats)",  
     ylab = "Price (SIN $)",  
     bg = "lightblue",  
     col = "black", cex = 2, pch = 21, frame = FALSE)  
abline(fit, lwd = 2)
```

plot



For more stats:

```
summary(fit)  
attributes(summary(fit))
```

To get more specific outputs:

```
summary(fit)$sigma
```

```
## [1] 31.84052
```

```
summary(fit)$r.squared
```

```
## [1] 0.9782608
```

## For something more complex: glm function

That's for logits, probits, poisson regs, etc.

```
# Automatic vs. manual on weight, cylinders, miles per gal  
head(mtcars)  
binreg <- glm(am ~ wt + cyl + mpg,family="binomial", data=mtcars)  
summary(binreg)$coefficients
```

Also works with poisson

```
# number of carburetors on weight, cylinders, miles per gallon  
poisson <- glm(carb ~ wt + cyl + mpg, family="poisson"  
               , data=mtcars)  
summary(poisson)$coefficients
```