HW #8 Stat 135

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```
x_values  = c(.34, 1.38, -.65, .68, 1.40, -.88, -.30, -1.18, .50, -1.75)
y_values = c(.27, 1.34, -.53, .35, 1.28, -.98, -.72, -.81, .64, -1.59)
x_mean = mean(x_values)
y_mean = mean(y_values)
x_values - x_mean
```

```
##  [1]  0.386  1.426 -0.604  0.726  1.446 -0.834 -0.254 -1.134  0.546 -1.704
```

```
sample = length(x_values)

# 2a
s_xy = sum((x_values - x_mean) * (y_values - y_mean )) / sample
s_xy
```

```
## [1] 0.94177
```

```
s_xx = sum((x_values - x_mean) ** 2)/ sample
s_xx
```

```
## [1] 1.041304
```

```
s_yy = sum((y_values - y_mean) ** 2) / sample
s_yy
```

```
## [1] 0.892665
```

```
beta_1 = s_xy / s_xx
beta_1
```

```
## [1] 0.9044141
```

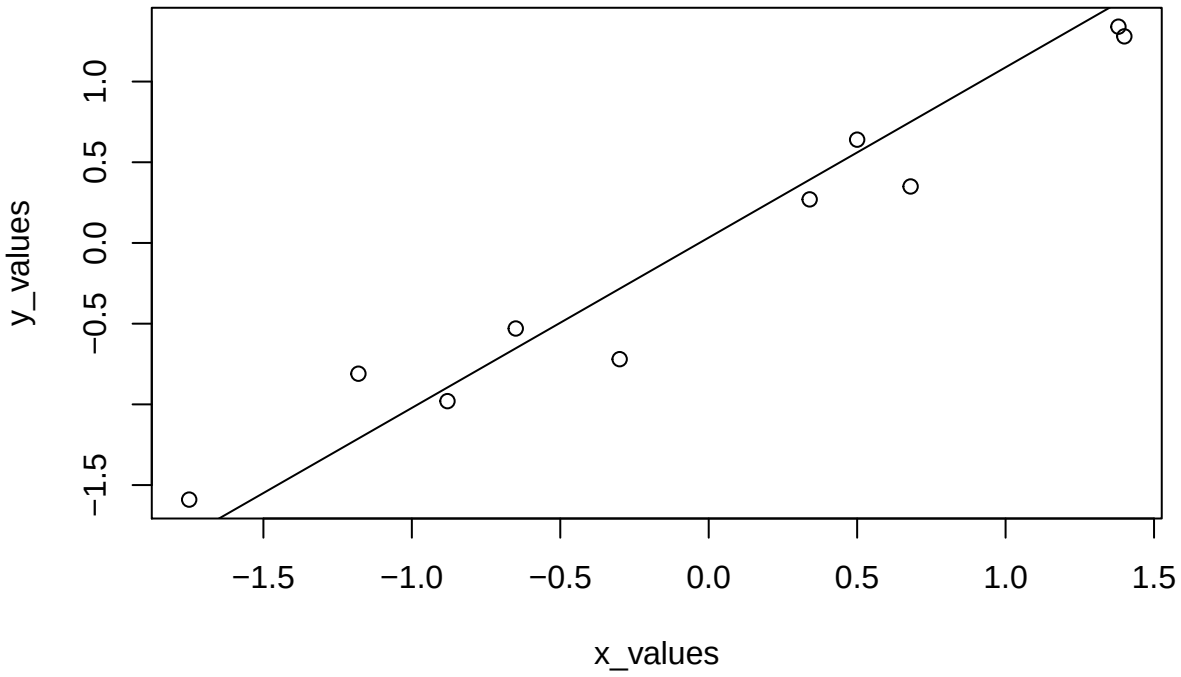
```
beta_0 = y_mean - (beta_1 * x_mean)
beta_0
```

```
## [1] -0.03339695
```

```
plot(x_values, y_values)
fit1 = lm(x_values ~ y_values)
fit1
```

```
##
## Call:
## lm(formula = x_values ~ y_values)
##
## Coefficients:
## (Intercept)     y_values
##     0.03313      1.05501
```

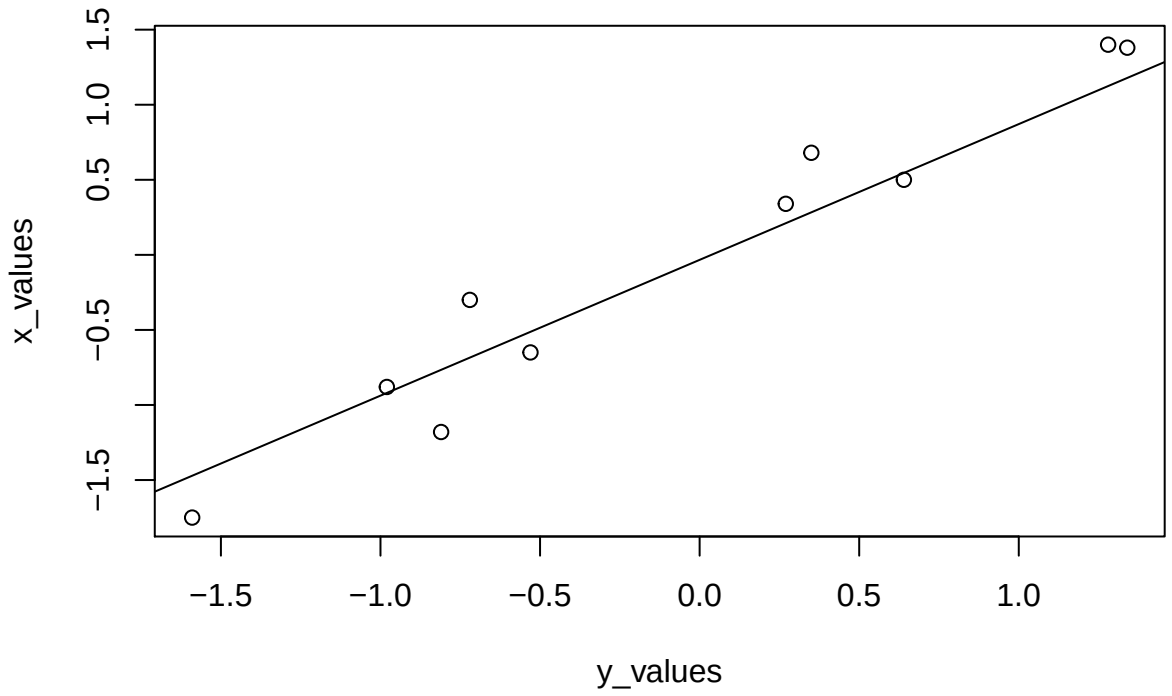
```
abline(fit1)
```




```
# 2b
plot(y_values, x_values)
fit2 = lm(y_values ~ x_values)
fit2
```

```
##
## Call:
## lm(formula = y_values ~ x_values)
##
## Coefficients:
## (Intercept)     x_values
##     -0.0334       0.9044
```

```
abline(fit2)
```




```
beta_1 = s_xy / s_yy
beta_1
```

```
## [1] 1.055009
```

```
beta_0 = x_mean - (beta_1 * y_mean)
beta_0
```

```
## [1] 0.03312571
```

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