

homework 06

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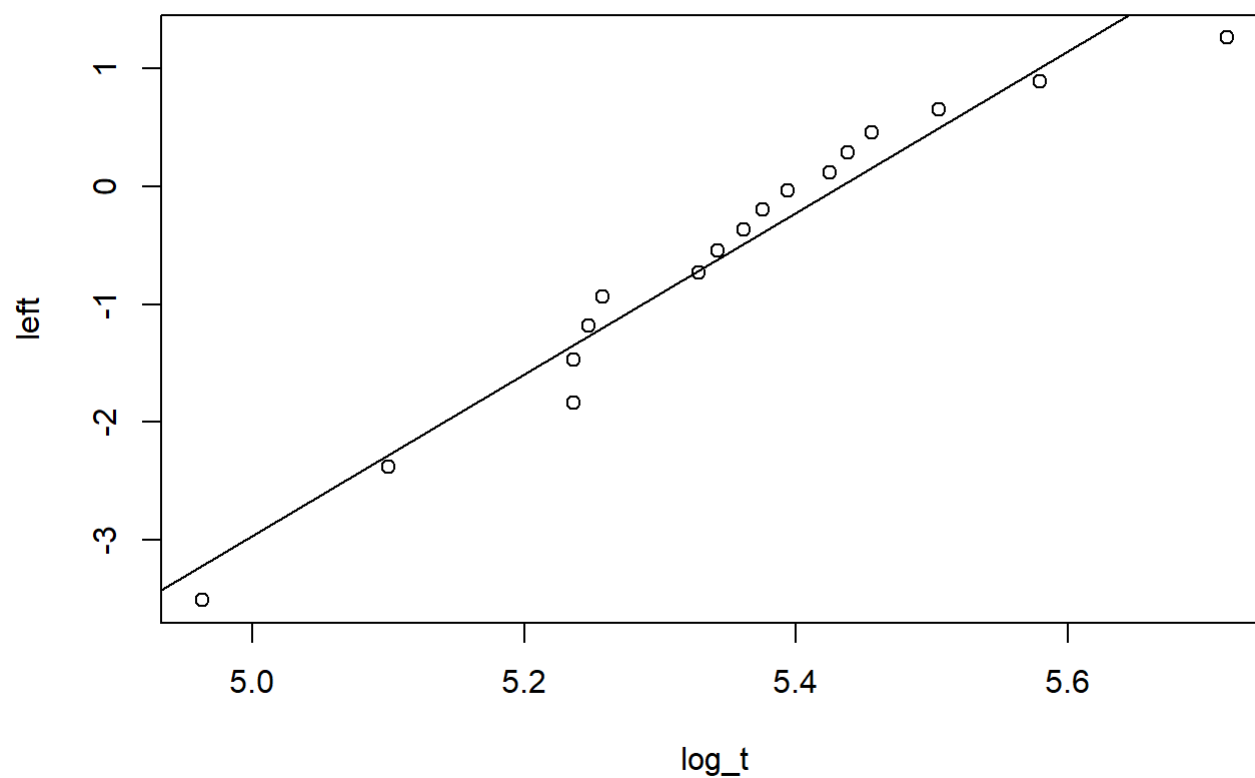
```
data <- c(143, 164, 188, 188, 190, 192, 206, 209, 213, 216, 220, 227, 230, 234, 246, 265, 304)
data <- data[order(data)]
st <- c()
for (i in 1:length(data)) {
  st_this <- 1 - (i-0.5)/length(data)
  st <- c(st, st_this)
}
st
```

```
## [1] 0.97058824 0.91176471 0.85294118 0.79411765 0.73529412 0.67647059
## [7] 0.61764706 0.55882353 0.50000000 0.44117647 0.38235294 0.32352941
## [13] 0.26470588 0.20588235 0.14705882 0.08823529 0.02941176
```

```
left <- log(-log(st))
log_t <- log(data)
log_t
```

```
## [1] 4.962845 5.099866 5.236442 5.236442 5.247024 5.257495 5.327876
## [8] 5.342334 5.361292 5.375278 5.393628 5.424950 5.438079 5.455321
## [15] 5.505332 5.579730 5.717028
```

```
plot(x=log_t, y=left)
m <- lm(left~log_t)
abline(m)
```



```
m
```

```
##
## Call:
## lm(formula = left ~ log_t)
##
## Coefficients:
## (Intercept)      log_t
##      -37.233       6.854
```

Thus, $\beta = 6.854$ and $\beta \log(\alpha) = -37.233$. And, $\alpha = \exp(-37.233/6.854) = 0.004373016$