Week 1 Homework

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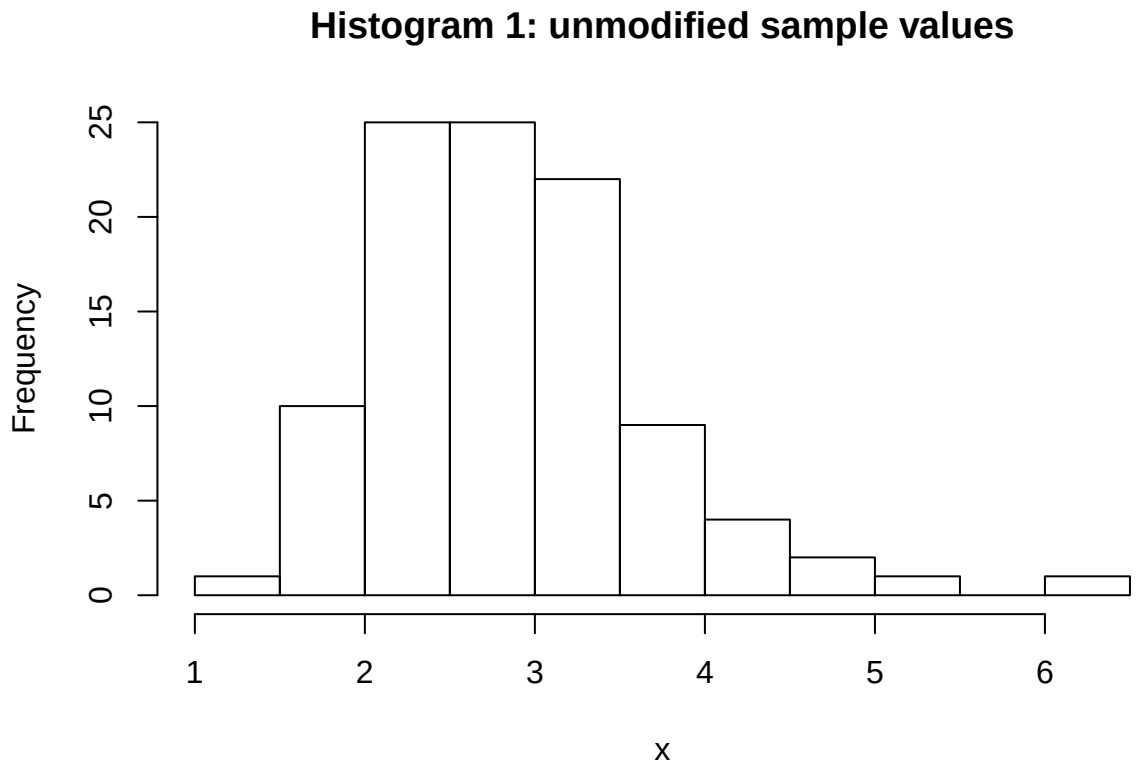
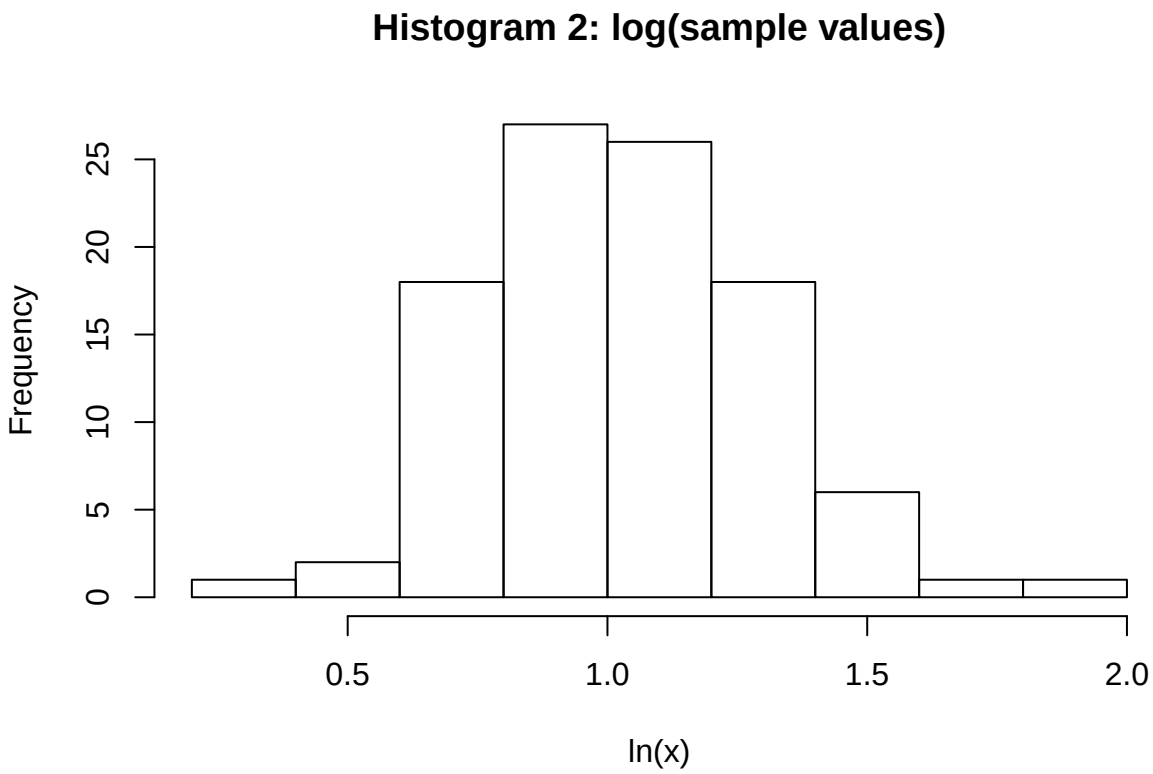
The code below takes a random sample of size 100 from the lognormal distribution. Histogram 1 uses the unmodified sample values and is right skewed. In order to draw histogram 2, the natural logarithms of the sample values were calculated. Notice that histogram 2 is more symmetrical: the logarithm of the random variable is normally distributed. The mean and standard deviation of the sample are 1 and 0.25, respectively.

```
x = rlnorm(100, meanlog = 1, sdlog = 0.25)
ln_x = log(x)
hist(x, breaks = 8, main = "Histogram 1: unmodified sample values", xlab = "x")
```




```
hist(ln_x, breaks = 8, main = "Histogram 2: log(sample values)", xlab = "ln(x)")
```


Histogram 2: log(sample values)
Frequency
0
5
10
15
20
25
0.5
1.0
1.5
2.0
ln(x)