# R Lab 4

Max Tjen

7/26

Problem 1:

A random sample of 16 Americans in a city yielded the following data on the number of pounds of beef consumed per year: 118 ,115.125,110, 112, 130,117 ,112 ,115 ,120, 113, 118, 119, 122, 123, 126.

a) (4 points)

Construct a quantile-quantile plot for the data to check if the annual beef consumtion in the given city can be modelled by a normal distribution.

```
data = c(118, 115, 125, 110, 112, 130, 117, 112, 115, 120, 113, 118, 119, 122, 123, 126)
qqnorm(data)
qqline(data)
```
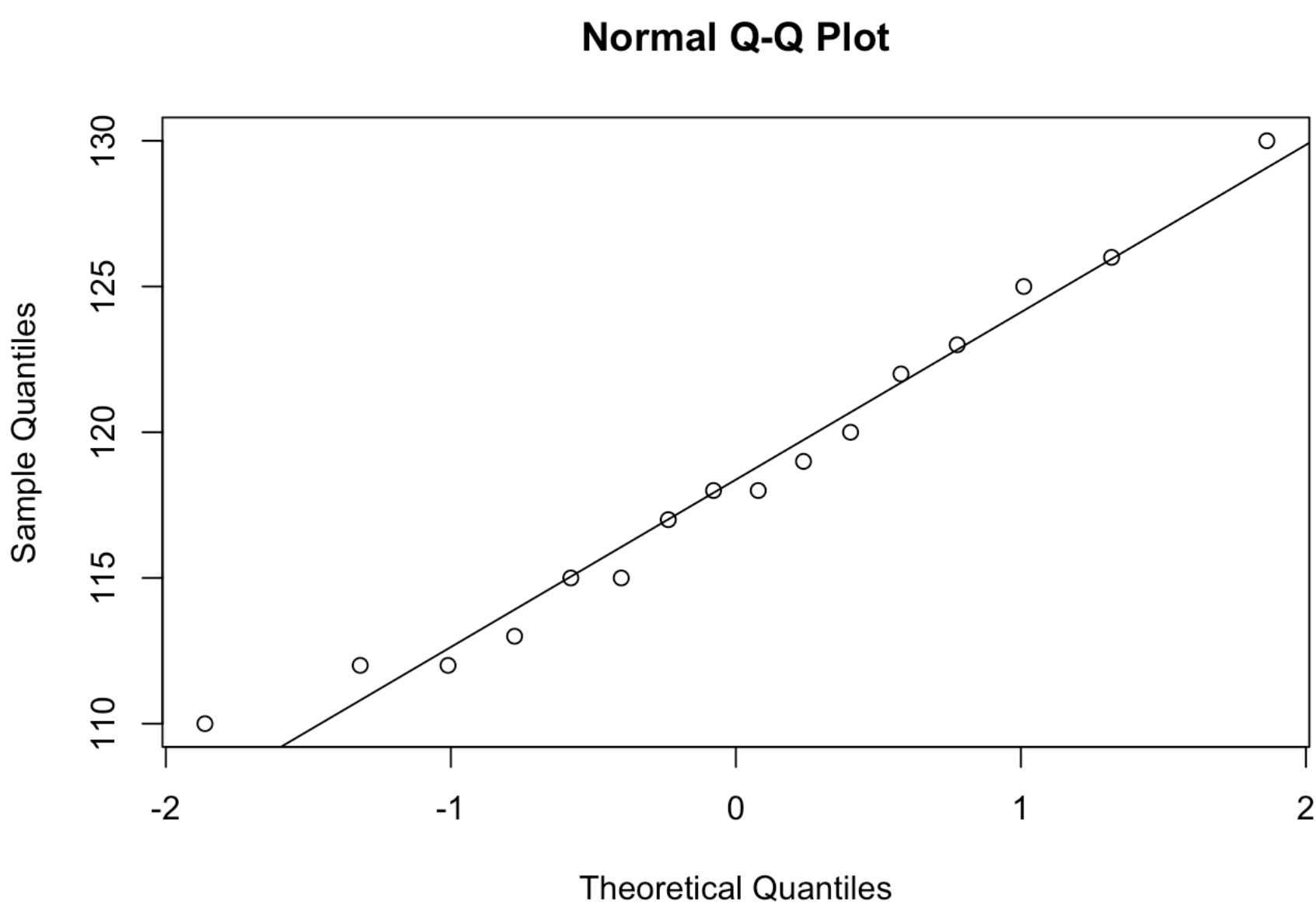

Ans: The data can be modeled by a

normal distribution because the data is mostly along the line of best fit

b) (4+2=6 points)

Construct a two sided 95% confidence interval for the mean beef consumption of the people in the given city and interpret it.

```
t.test(data, mu = 0, alternative = "two.sided", conf.level=0.95)
```

```
##
##  One Sample t-test
##
## data:  data
## t = 83.753, df = 15, p-value < 2.2e-16
## alternative hypothesis: true mean is not equal to 0
## 95 percent confidence interval:
##   115.4234 121.4516
## sample estimates:
## mean of x
##   118.4375
```

Ans: 95% CI = (115.4234, 121.4516)
Since there is a 95% chance that the random intervals cover the value of μ, we expect 95% of the intervals to cover the actual value of μ