First Name: Binh Last Name: Nguyen Student No: 20687353

<u>Problem 4:</u> Fill in the information below based on your data which were generated using your ID number as the seed for the random number generator.

model = 3 mu = 3 sigma = 1.732051

Insert the qqplot of the data here.

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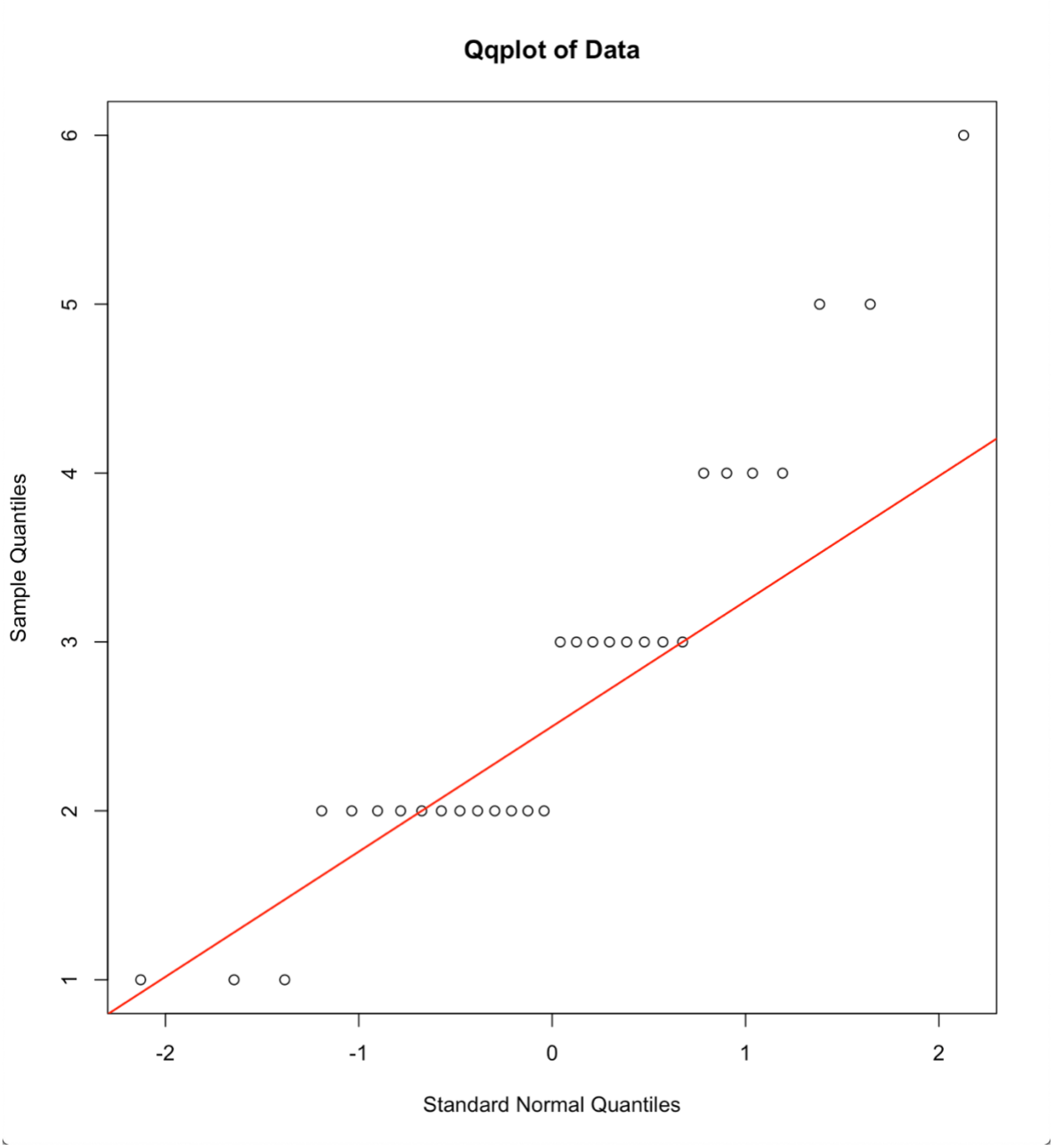

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Based on the qqplot indicate how well the Gaussian model fits the data. Justify your conclusion.

Points in a qqplot given above do not lie a long a straight line which indicates that Gaussian model is not a reasonable model for these data.

mu0 = 4

Insert the output of the command

```
t.test(y,mu=mu0,conf.level=0.95)
```

One Sample t-test

data: y
t = -5.5241, df = 29, p-value = 5.918e-06
alternative hypothesis: true mean is not equal to 4
95 percent confidence interval:
2.310041 3.223292
sample estimates:
mean of x
2.766667

Obtain the following information from this output:

value of test statistic for testing H: mu = mu0 is: -5.5241

degrees of freedom of t distribution = 29

p-value for testing H: mu=mu0 equals 5.918*10^-6

95% confidence interval for mu is: [2.310041, 3.223292]

Insert your conclusion regarding H: mu=mu0 here.

Since p-value < 5%, there is a very strong evidence against Ho: mu=mu0 based on data

sample mean = 2.766667

sigma0 = 3.732051

sample variance = 1.495402

p-value for testing H: sigma = sigma0 equals 8.572076*10^-10

Insert your conclusion regarding H: sigma=sigma0 here.

Since p-value < 5%, there is a very strong evidence against Ho: sigma = sigma0 based on data

95% confidence interval for sigma squared:

[0.9484798, 2.702466]

95% confidence interval for sigma:

[0.9738993, 1.643918]