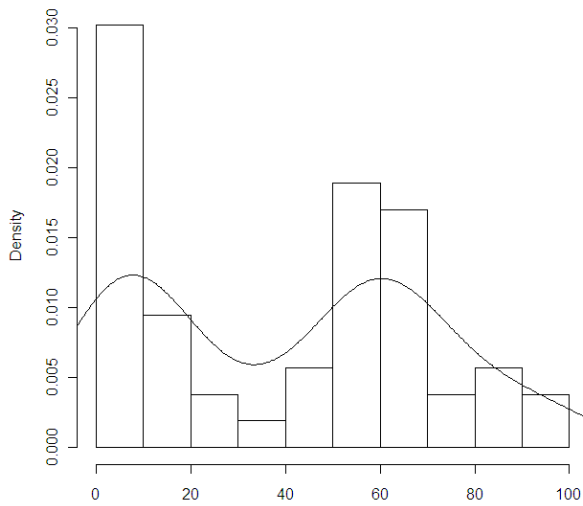


Exercise 1.

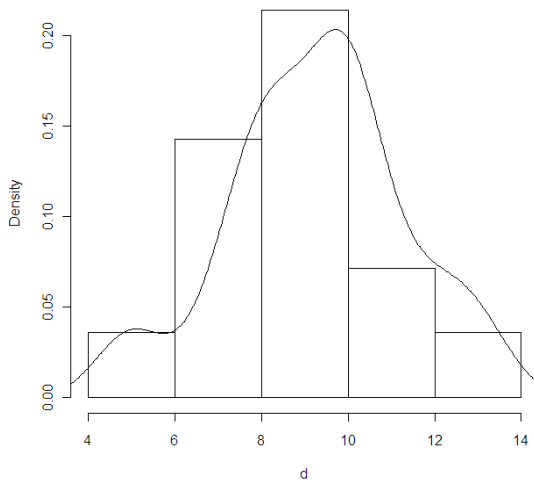
The following plots show histograms of binned data normalized so that the Y-axis shows the data's relative frequency (density) in the range of zero and one. Probability density functions have been fit to the data and are shown as splines overlaid over the histograms. The scale of the X-axis is irrelevant for this exercise.

For each plot (P1, P2 and P3): State whether the distribution is reasonably normal. If you do not think a plot is normal then state whether it could easily be transformed so it would better resemble a normal distribution. Motivate your answer in less than 100 words per plot. Note: In these cases there may be no one correct answer per se. Therefore your motivations for your answers are critical.

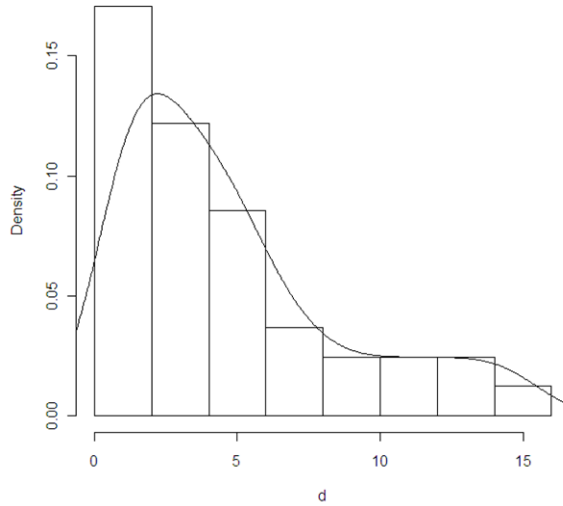
Plot P1:



Plot P2:



Plot P3:



Exercise 2.

The following dataset is from an experiment with two conditions: Handwriting vs. Keyboard. There were six participants who all used both methods. The dependent variable was speed, labeled as either HandwritingSpeed or KeyboardSpeed in the table below. Participants took part in two sessions: session one and session two. In each session they used both methods.

Participant	HandwritingSpeed	KeyboardSpeed	SessionNumber
1	34.4	62.1	1
2	26.6	25.6	1
3	29.5	56.3	1
4	32.8	48.6	1
5	34.5	47.9	1
6	31.9	59	1
1	45.4	60.1	2
2	48.4	58.3	2
3	51.5	57.3	2
4	49.2	59.2	2
5	50.0	58.1	2
6	32.5	59.0	2

Plot the dependent variable as a function of session number. Both conditions should be in the same plot so it is possible for the reader to easily compare them.

Exercise 3.

A researcher wanted to compare two text input methods A and B and claim they perform equally. The researcher calls in 16 participants lets them test write several sentences with

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both methods. You can assume the experimental design was correct. During the experiment the researcher measures participants' entry rate (speed).

The researcher then compares the mean entry rate of method A and B using repeated measures analysis of variance.

The statistical significance test results in the following output (at significance level $\alpha = 0.05$):

$$F_{1,15} = .792, p = .388$$

The researcher concludes:

“I have shown that method A and B perform about the same.”

Do you agree? Motivate your answer in less than 200 words.