Reading Guide

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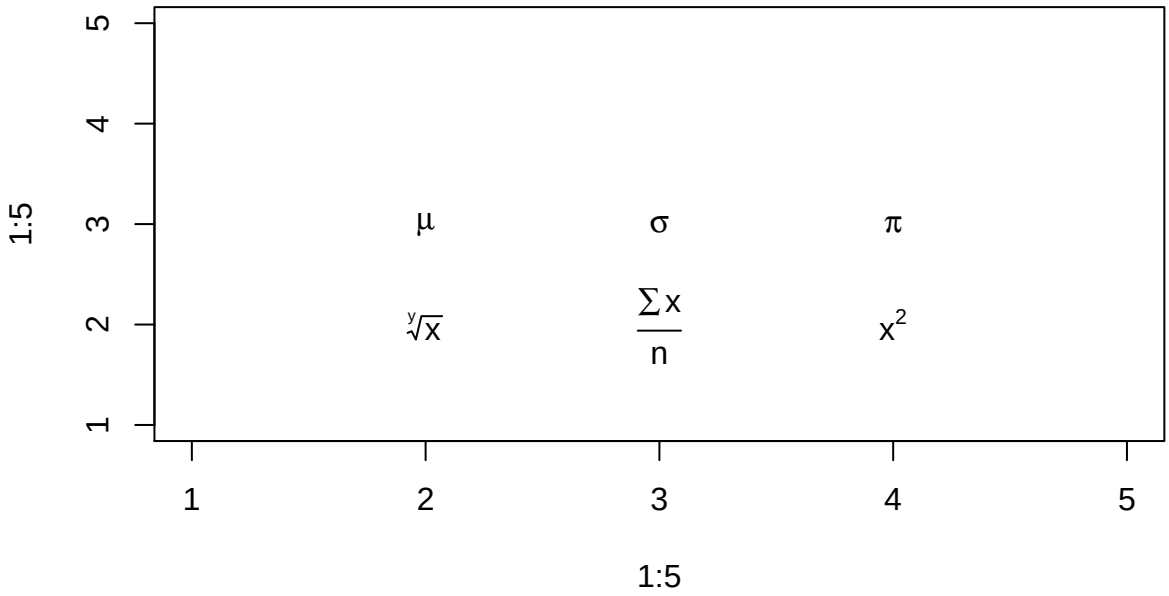
Section Notes for *R in Action*

3.3 Graphical Parameters
Saving a baseline (parameters) to a variable is best practice.

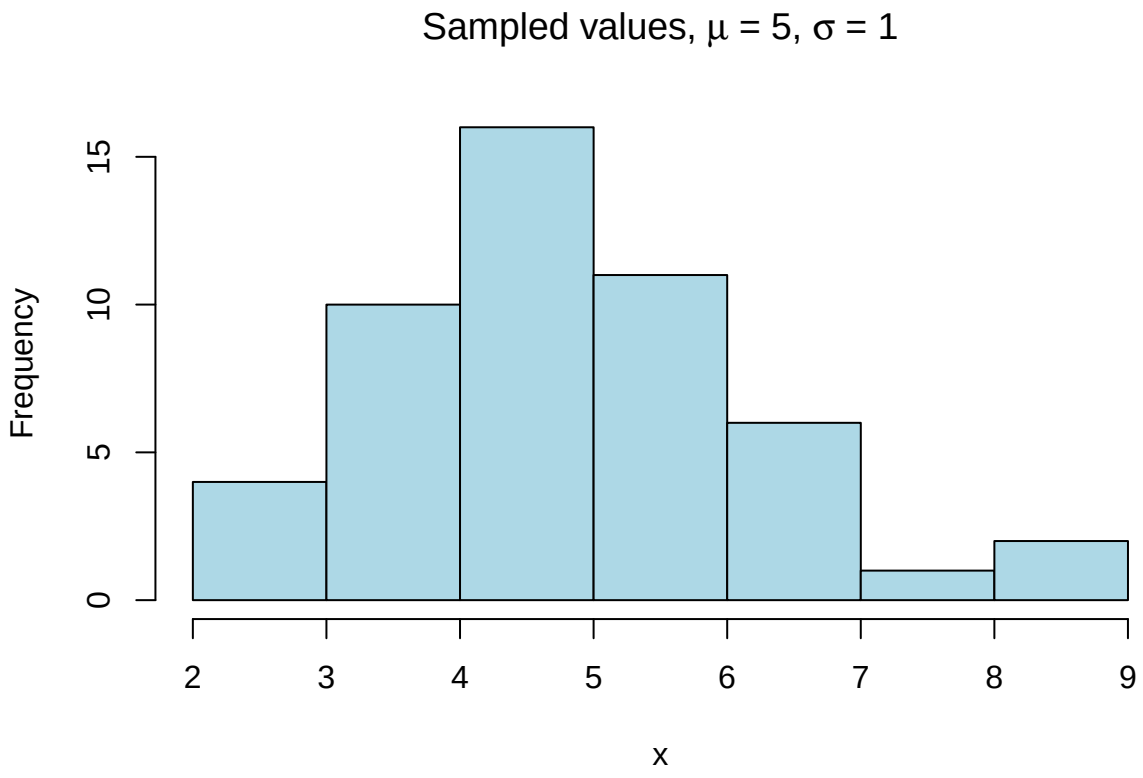
3.4.6 Math Annotations
Unfortunately, this section does not provide a lot of details about embedding mathematical symbols in your plots, other than point the reader to the plotmath demo. What is not stated in this section is that you'll need to use the `expression()` function to embed mathematical characters – usually letters from the Greek alphabet – into your graphs. Let's take a look at how this is done:

```
# Create a blank plot.
plot(1:5, 1:5, type = "n")

# Add text inside the plot to demonstrate how to embed math symbols and/or equations.
text(2, 3, expression(mu))
text(3, 3, expression(sigma))
text(4, 3, expression(pi))
text(2, 2, expression(sqrt(x, y)))
text(3, 2, expression(frac(sum(x), n)))
text(4, 2, expression(x^2))
```



The code listed here works fine if all you want to do is embed a formula. But what if you also want to add explanatory text? In that case, you'll need to use the `paste()` function. Let's generate a simple histogram to show how this is done.

```
# Generate random numbers from a normal distribution.
x <- rnorm(mean = 5, sd = 1, n = 50)

# Create a histogram with a title, indicating the mean and standard deviation.
hist(x, main = expression(paste("Sampled values, ", mu, " = 5, ", sigma, " = 1")),
         col = "lightblue")
```



We now have a nice title for our graph with embedded symbols. R provides support for just about any kind of mathematical expression. To see more examples, type `?plotmath()` at the R prompt.