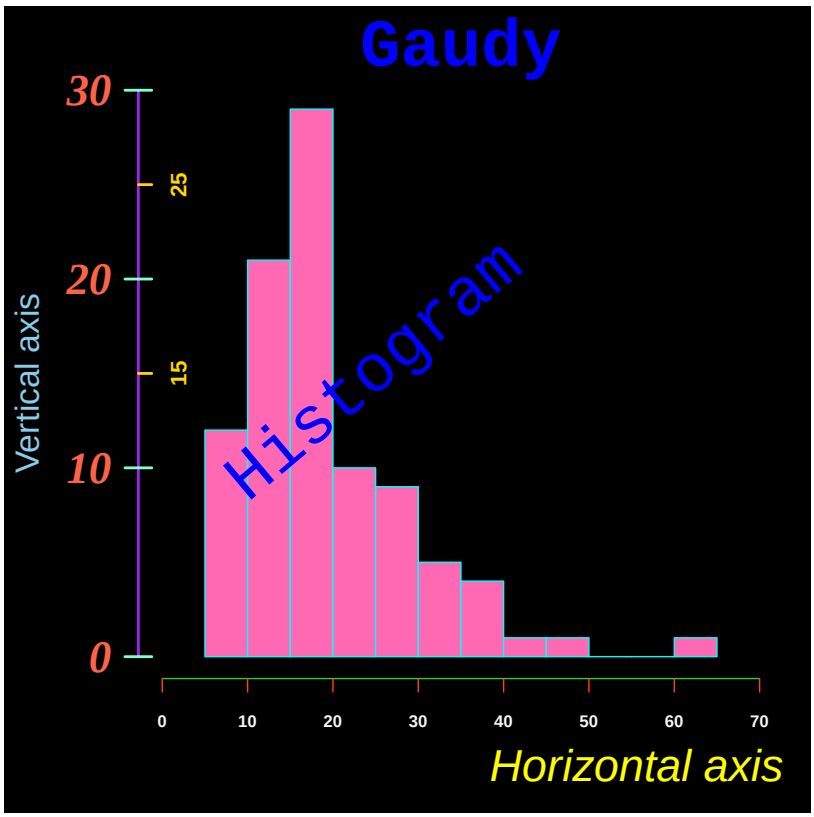
Problem Set 6: Visualizing Data

You may not use any downloaded packages. No paper submission is required for this assignment. See the instructions in Problem Set 2 regarding the submission of R code.

The following functions and graphical parameters, which have not been discussed in class, may or may not be useful:

```
bg, cex.axis, cex.lab, cex.main, cex.sub, col.lab, col.main,
col.sub, crt, diff, family, fg, font, font.axis, font.lab,
font.sub, lines, lty, lwd, srt, tck, tcl, xaxp, xaxs, xaxt, yaxp
```

1. **[12 pts]** Load the data frame `Cars93` from the package `MASS` and reproduce the following graph.



Details for producing the graphical elements are as follows.

- The graph shows a frequency histogram of `Cars93$Price` with right-closed bins on a `black` background, with `hotpink` bars and `cyan` border around the bars.
- The figure margins are $(5, 5, 3, 1)$.

- The horizontal axis is `limegreen` with `orangered` tick marks. The tick marks are labeled in a bold, san serif typeface, with a font size that is 0.75 times the default value and colored `whitesmoke`.
- The vertical axis is `purple` with a line width of twice the default value. The major tick marks are `aquamarine` with a line width of twice the default value; they are labeled in a bold, italic, and serif typeface, with a font size that is twice the default value and colored `tomato`. The minor tick marks are `gold` with a line width of twice the default value; they are labeled in a bold, sans serif typeface using the default font size.
- The main title "Gaudy" is `blue` and centered, with a font size that is three times the default value, and has a bold, monospaced typeface.
- The label for the horizontal axis is `yellow` and right-justified, with a font size that is twice the default value, and has a italic, sans serif typeface.
- The label for the vertical axis is `skyblue` and centered, with a font size that is 1.5 times the default value, and has a san serif typeface.
- The text "Histogram" is `blue` with a font size that is three times the default value. It is positioned at the coordinate $(25, 15)$ and rotated $40°$ counterclockwise with respect to the horizontal axis.

2. **[12 pts]** The graphs below show the density histograms of `Cars93$Price` as step functions, where:

   - the default bins are used in the left panel, and
   - the default bins are shifted to the left by 2.5 units in the right panel.

   Reproduce the graphs and save the graphic as a PDF file named `ps06p2.pdf` (submit only the R code to do so and not the PDF file).