1. Both Cleveland Wainer talks about the possibility of discovery from graphics as opposed to display. Sometimes we discover things that others have not seen in a less startling form than Wainer discusses. Locate a newspaper story with an accompanying graphical representation reported sometime in January 2005, and look for information in the graphical display not described in the story. Your answer should report the details of the article (e.g., name of paper, date, title, and url if online), give a copy of the graphic itself, and describe what you were able to find in it that was “novel.”

2. Download lab3.csv and source lab3.r just as you did in the lab. Load the data into R, extract the column named MEDRENT (the median gross rent per census tract), and split according to population density.

(a) Make a boxplot comparison between high and low population density (city versus country).

(b) Now overlay the full distributions, and emphasize differences using a diff or ditch plot.

(c) Looking at the boxplots, one might conclude: “The rents in cities are shifted upward relative to the country.” Critically evaluate this statement.

(d) Make a Q-Q plot comparison between high and low population density. According to this plot, the rent distribution for high population density can be produced by transforming the low-population-density rents. In this transformation, some rents are increased and others decreased. Which ones?
3. Below you will find a quantile-quantile plot relating a variable $x$ to $y$.

(a) What mathematical transformation, when applied to the $x$ data, would produce $y$’s distribution?

(b) Sketch what an overlay of the two distributions might look like.
4. A statistician made normal Q-Q plots and histodots plot for five datasets; however, he mixed the plots up. Match each normal Q-Q plot with its corresponding histodot plot.