

36-315: Statistical Graphics and Visualization

Handout 4

Date: January 22, 2003

Task 1: Find a transformation relating two distributions

Quantile of a data point - The fraction of points less than it.

Quantile-quantile (Q-Q) plot - A pseudo-scatter plot between two variables whose observations are not paired. Values at the same quantile are implicitly paired. For equal numbers of points, just a scatter plot of sorted x values versus sorted y values. For unequal numbers, a scatter plot of values at the same quantile in both data sets.

Normal Q-Q plot - One of the datasets is an exact normal distribution. High correlation in the plot means the other dataset is nearly normal.

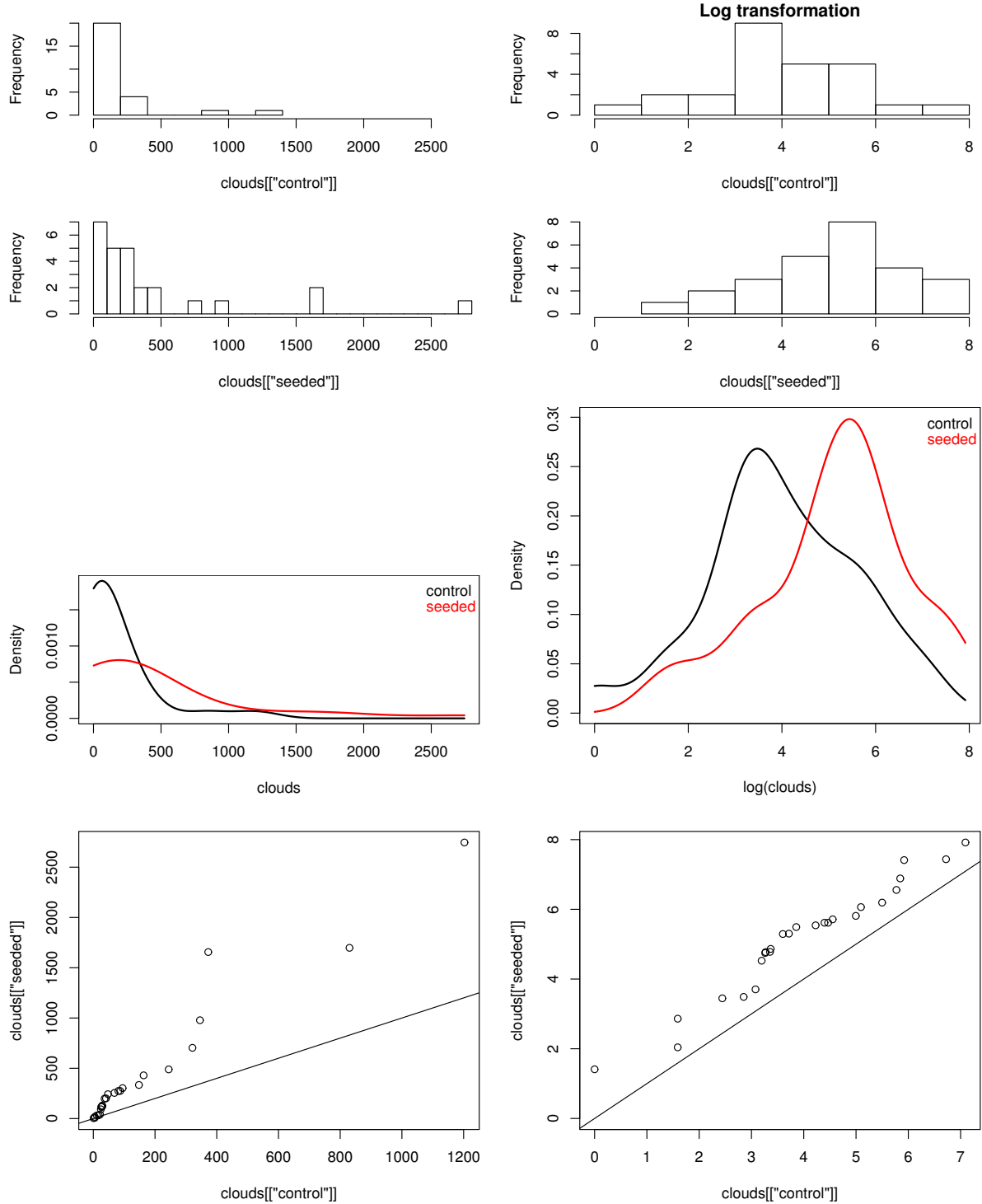
Task 2: Find regions where one density is higher than another (surplus and deficit)

Density difference plot - The point-by-point difference between two estimated density curves.

Density ditch - A density difference plot with one density shown beneath, forming a “ditch” which the other density “fills in”.

Histodot ditch - Same idea but the ditch is filled with histodots.

Rainfall was measured from 52 clouds, half of which were seeded with silver iodide.



Question: If seeding had no effect until a cloud had enough water ($\log(\text{rainfall}) = 4$, say), what would the Q-Q plot look like (after log transformation)?

