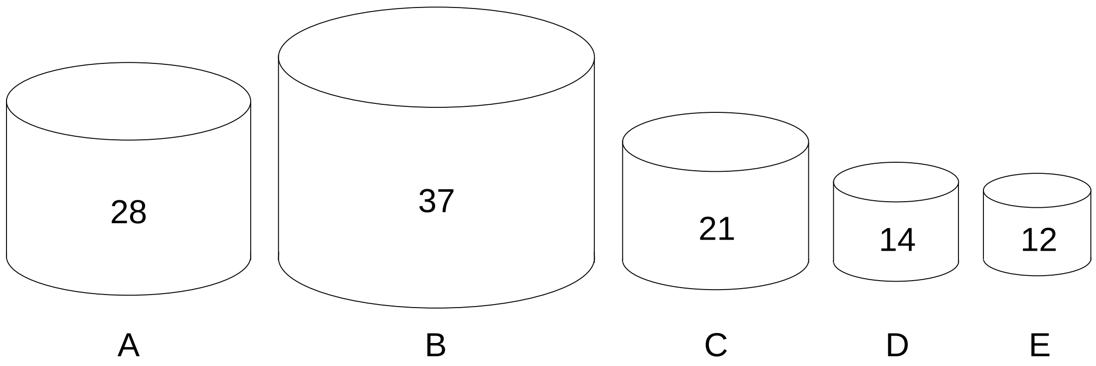
T-61.5010 Information visualization

Problem set 1. Wed 31.1.2007:16-18 T1

- Tuftes theory on graphical excellence
- Basis of visual perception

1. Calculate the lie factor of the following graph. Do you think the concept of a lie-factor is useful or relevant in practice?



2. Kenneth and Jeffrey are running a high-tech company. Unfortunately business has been slow and the next interim report is not going to please the shareholders. Sales are declining and operating costs are going through the roof.

   a) Help Kenneth and Jeffrey create a visualization of their sales and expenses from the past four quarters that makes the situation look less dramatic. You can use chartjunk, optical illusions, "creative" layout, etc. to display the data.

   b) Kenneth and Jeffrey got busted by the SEC for providing incorrect information about the company's financial situation to the shareholders. The new management asks you to create a truthful visualization of the sales and expenses. Do this by improving a standard graph from MS Excel, Openoffice, Matlab, etc. according to Tuftes principles. Present both the standard graph and the improved one. Discuss what improvements you made and why they are useful. Use the same data as in part a).

3. Explain the Hermann gird illusion and brightness contrast effects by the DOG (Difference Of Gaussians) model.

You should solve the exercises prior to the sessions, where the solutions will then be presented and discussed. There will be a list to which you can mark which problems you have solved. You should be prepared to present your solution for the class. Handing in your answers is NOT necessary.