

## T-61.5010 Information visualization

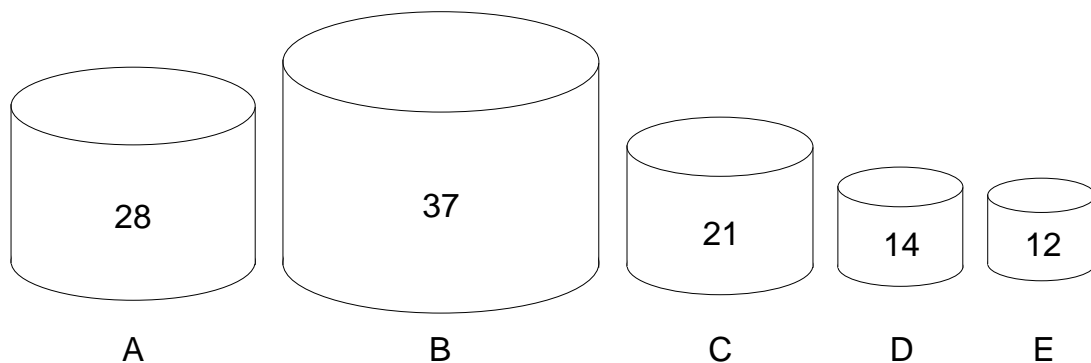
**Problem set 1.** Tue 5.2.2008:12-14, Wed 6.2.2008:12-14 T3

Due to the high number of registrations in WebTOPI and the small capacity of lecture hall T3, we have decided to have two problem sessions per week, one on Tuesday and another one on Wednesday. The content of both sessions will be the same, you are free to choose which session to attend. If the attendance to the sessions is low, we will continue with having the session on Wednesday only.

You should *solve the exercises prior to the session*, 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.

This problem sheet has two (2) pages.

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 Tufte’s 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).

*(please turn page)*

3. Explain the following topics in one (1) slide each:

- a) Climate change
- b) The quicksort-algorithm
- c) Tufte's theory on graphical excellence

Be prepared to present the slide to the other students.