Exercise 1: Describe the data cube, how is it defined and which operations does it support? Present chosen examples.

Exercise 2: Summarize and compare possible implementations of the multi-dimensional data cube in a DWH.

Exercise 3: Define the terms star-schema and snowflake-schema.

Exercise 4: Assign the following facts to the corresponding summation type, and explain the summation type.

- order quantity of an article per day
- stock
- exchange rate

Which further characteristics of facts have to be fulfilled?

Exercise 5: Describe different forms of hierarchies w.r.t. dimensions in a DWH. Give an example for each form (except the dimension time).

Exercise 6: Describe the conceptual relational representation classification hierarchies.

Exercise 7: Classify and define aggregate functions.

Exercise 8: Use ER-Diagrams to model a database for analyzing an international mail order company. The database should support analysis of the following aspects:

1. supplier,
2. customer,
3. orders,
4. articles,
5. time series

Good Luck!