**Exercise 1**

Look at the following (familiar) ER-diagram and create SQL DDL statements to create the respective tables.

```
Station
  #platforms
  name
  City
    located_in
      name
      state
  Train
    trainNo
    #wagons
    start
    connects
      end
        departure
        arrival
```

**Exercise 2**

Write a SQL statement to create a view that gives an overview of the difficulty of each lecture. The difficulty of a lecture is defined as the sum of the weekly hours of that lecture and its direct predecessors. In our example instantiation of the university schema, the following query on your view should yield the result (only partially shown):

```sql
SELECT * FROM LectureDifficulties;
```

<table>
<thead>
<tr>
<th>lectureNr</th>
<th>title</th>
<th>difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>5216</td>
<td>Bioethik</td>
<td>6</td>
</tr>
<tr>
<td>4630</td>
<td>Die 3 Kritiken</td>
<td>4</td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>

**Exercise 3**

Considering the following table definitions:
1) `create table A(a int primary key);
create table B(b int);

2) `create table A(a int primary key);
create table B(b int references A(a));``

Assuming the cardinalities (number of tuples) of the relation $A$ and $B$ are $|A|$ and $|B|$, respectively. How many tuples are produced by the following queries. If no exact estimate is possible, give a range. Alternatively you can use mathematical set operations.

a) `select * from A, B;`
b) `select * from A join B on A.a = B.b;`
c) `select * from A left outer join B on A.a = B.b;`
d) `select * from A right outer join B on A.a = B.b;`
e) `select * from A full outer join B on A.a = B.b;`