

1. Write your name below.

2. Consider a database with relations **Students**(*id*, *name*, *year*), **Courses**(*id*, *title*, *credits*), and **Enrolls**(*student*, *course*). A tuple $(i, n, y) \in \mathbf{Students}$ denotes a student with student-identifier i , name n , and year y . A tuple $(i, t, c) \in \mathbf{Courses}$ denotes a course with course-identifier i , title t , and c credits. A tuple $(s, c) \in \mathbf{Enrolls}$ denotes the enrollment of the student with identifier s in the class with identifier c . Write two different SQL query that return the student IDs that are in **Courses** but not in **Students**. (Make the queries as different as possible.)

3. Write a SQL query that generates a list of course IDs, course names, and the enrollment in each course with fewer than 10 students enrolled. The desired output is a list of tuples of the form (i, t, n) where i is a course identifier, t is that course's title, and n is the number of students enrolled in that course. If there is an enrollment record for a course with no known title then t should be null for that tuple.

4. Write algebra queries equivalent to each of the above SQL queries.