This is a closed book test. You may have one page of notes (two-sides).

1. Consider the AIRCRAFT database described by the following Crowsfoot diagram.
Write SQL queries for this schema which

a) Show all models (code and name) of aircraft that have been chartered (that is, rented) by a customer who has area code 541.

b) For each pilot, list the pilot’s name and the number of charters that person has been hired for (include those with zero).
c) Show all charters whose assigned pilot is NOT qualified to fly the model of aircraft which is assigned to that charter.

d) (551) List all charters that use an aircraft of the most common model. (That is, look at the number of aircraft for each model. The most common model has the most aircraft. List charters that use one of those models. Include ties and give the model name.)
2. Draw an ER Diagram for the TOUR_OF_OREGON problem. Here we are designing a model for a bicycle race which goes from city to city in Oregon.

- We need to keep track of all people, who are identified by a p_id. We also want to keep their name and email.
- There are also two types of people: employee and rider. For employees we track their role, and for riders their bib_num.
- There are several cities on the tour. For each we have a city_code, name, and elevation. Each employee is assigned to a single city.
- There are a number of legs, each with a unique leg_num. A leg starts in one city and finishes in another city (which need to be in the database) and has a distance.
- We want to track the time of a rider on a leg, which we call leg_instance. It will be owned by rider and leg, and have a time.

Be sure to use Chen ER notation from the text or the Crowsfoot style as used by MySQLWorkbench.
3. Convert the ASSIGNMENT ER Diagram to a relational schema. Indicate primary keys and foreign keys. (Note: ques_num is a partial key to question.)