Use the handout of three tables -- Vehicle, Own, Person -- to answer these.

0. Assume that Vehicle only has the first two rows shown on the handout and that Person only has the first two rows shown on the handout. Show or otherwise describe the result on the natural join of Vehicle and Person.

Give relational algebra expressions for each of the following queries specified in English (assuming the three tables, with all rows, of the handout).

1. Write a query that returns the Name and Phone of all Persons owning VRN=123.

2. Write a query to show the VRN and Mo of each owned Vehicle and the Name and Addr of the Person who owns it.

3. Write a query to to show the VRN and Mo of each owned Vehicle by someone on 'Birch' and the Name of the Person who owns it.

4. Write a query that returns the VRN and Mo of any vehicle that isn't owned.

5. Write a query that returns pairs of SSNs for (different) Persons that live at the same Addr.

6. Write a query that returns pairs of Names for (different) Persons that live at the same Addr.

7. Write a query that lists pairs of Vehicles by Ma and Mo that are owned by the same Person.

8. Write a query that lists pairs of Persons by SSN and Name that own a Vehicle of the same Ma, Mo and Color.

9. Suppose that there was a Price attribute on Vehicle. Write a query in which each car is listed (paired) with each other car that costs less than it does.

10. Give an expression tree for the relational algebra query of question 3.