

QUESTION 1

- a. Find names and cities of publishers distributing red books to at least one school not located in Calgary?

```
SELECT      P.name, P.city
FROM        Publisher AS P, Distribute AS D, Book AS B
WHERE       P.name = D.name AND D.ISBN = B.ISBN AND
            B.color = 'red';
```

- b. Find directors of the schools located in Paris and receiving books from publishers located in London?

```
SELECT      S.director
FROM        School AS S, Publisher AS P, Distribute AS D
WHERE       S.city = 'Paris' AND P.city = 'London' AND
            D.pname = P.name AND D.sname = S.name
```


e. Find the title and total quantity of each book distributed to all the schools in the publisher's city

```
SELECT      B.title, B.quantity
FROM        Book AS B
WHERE       B.ISBN = ALL (SELECT ISBN
                           FROM    Book, Distribute,
                                   School AS S,
                                   Publisher AS P
                           WHEN    ISBN = B.ISBN, AND
                                   sname = S.name AND
                                   pname = P.name AND
                                   P.city = S.city);
```

QUESTION 2

a. Find street number of the longest street in each city in Canada?

```
SELECT      stno
FROM        Street
WHERE       MAX(length);
```

b. Find names of persons who own at least one house in each city in Canada?

```
SELECT      owner-name
FROM        House, Street AS S, City AS C
WHEN        stno = S.stno AND S.city-name = C.city-name
            AND C.country-name = 'Canada'

GROUPED BY owner-name
HAVING      COUNT(*) > 1
```

c. Find names of persons who own more than one house outside USA and at least one inside the USA?

```
SELECT      owner-name
FROM        House, Street AS S, City AS C
WHEN        stno = S.stno AND S.city-name = C.city-name
            AND C.country-name <> 'USA'

GROUPED BY owner-name
HAVING      COUNT(*) > 1
AND owner-name IN (
    SELECT  owner-name
    FROM    House AS H, Street AS S2,
            City AS C2
    WHEN    H.stno = S2.htno AND
            S2.city-name = C2.city-
            name
            AND C2.country-name =
            'USA'
    GROUPED BY owner-name
    HAVING    COUNT(*) >= 1);
```

- d. Find names of countries that have border with Germany?

```
SELECT      C.name
FROM        Country AS C, Border
WHEN        country-name1 = 'Germany' AND
            country-name2 = C.name
            OR
            country-name2 = 'Germany' AND
            country-name1 = C.name;
```

- e. Find names of persons who own at least one house in each of the countries that border Spain?

```
SELECT      owner-name
FROM        House, Street AS S, City AS C
WHEN        stno = S.stno AND S.city-name = C.city-name
AND C.country-name = ALL (SELECT C.name
                           FROM   Country AS C, Border
                           WHEN   country-name1 =
                                'Germany' AND
                                country-name2 =
                                C.name
                                OR
                                country-name2 =
                                'Germany' AND
                                country-name1 =
                                C.name);
```