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

c. Find names of schools receiving books from publishers located in Roma and distributingbooks to at least one school located in Toronto?

```
SELECT
            S.name
FROM
            School AS S
WHERE
            EXISTS (SELECT
                             Publisher AS P, Distribute
                    FROM
                             AS D
                             P.city = 'Rome' AND
                     WHERE
                             P.name = D.pname AND
                             S.name = D.sname
            AND
            EXISTS ( SELECT *
                     FROM
                             School AS S2
                             S2.city = Dsname AND
                     WHERE
                             S2.city = 'Toronto'
                    GROUP BY
                                 S.name
                                 COUNT(*)>=1);
                     HAVING
```

d. Find the titleand total quantity of each book distributed only to all the schools in Calgary?

```
SELECT B.title, D.quantity
FROM Book AS B, Distribute AS D
WHERE B.ISBN = ALL (SELECT ISBN
FROM BOOK, SCHOOL AS A
WHERE ISBN = B.ISBN AND
D.sname = S.name
AND S.city = 'Calgary');
```

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 thanone house outside USAand 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);