Section 4 – Relational Algebra

Clinic(<u>cid</u>, name, street, state)
Equipment(<u>eid</u>, type, model)
Assignment(cid, eid)

Write a Relational Algebra expression in the form of a logical query plan (i.e., draw a tree) that is equivalent to the SQL query below:

```
SELECT COUNT(*) FROM Clinic C
WHERE NOT EXISTS (
        SELECT * FROM Assignment A, Equipment E
        WHERE C.cid = A.cid
        AND A.eid = E.eid
        AND E.type = 'Fridge'
        AND E.model = 1004
);
```

Item(oid,category,price)
Gift(pid, rid, oid)

Write a Relational Algebra expression in the form of a logical query plan that is equivalent to the SQL query below.

```
SELECT O1.category, MAX(ABS(O1.price - O2.price))
FROM Gift G1, Gift G2, Item O1, Item O2
WHERE G1.pid = G2.rid
AND G2.pid = G1.rid
AND O1.oid = G1.oid
AND O2.oid = G2.oid
AND O1.category = O2.category
GROUP BY O1.category
HAVING count(*) > 5;
```