Extra Practice Writing Queries

Person(id, name, dob, pob)
Movie(id, name, year, rating, runtime, genre, earnings_rank)
Actor(actor_id, movie_id)  Director(director_id, movie_id)
Oscar(movie_id, person_id, type, year)

1) Find all people in the database who acted in Avatar.

SELECT P.name
FROM Person P, Actor A, Movie M
WHERE P.id = A.actor_id
  AND M.id = A.movie_id
  AND M.name = 'Avatar';

2) How many people in the database did not act in Avatar?

Will this work?

SELECT COUNT(*)
FROM Person P, Actor A, Movie M
WHERE P.id = A.actor_id AND M.id = A.movie_id
  AND M.name != 'Avatar';

If not, what will?

SELECT COUNT(*)
FROM Person
WHERE id NOT IN (SELECT actor_id
                 FROM Actor A, Movie M
                 WHERE A.movie_id = M.id
                 AND M.name = 'Avatar');
3) How many people in the database who were born in California have won an Oscar?

```
SELECT COUNT(DISTINCT P.id)
FROM Person P, Oscar O
WHERE P.id = O.person_id
AND P.pob LIKE '%, California%';
```

4) Which people in the database have acted in a movie directed by James Cameron?

```
SELECT DISTINCT ActP.id, ActP.name
FROM Person ActP, Actor A, Director D, Person DirP
WHERE ActP.id = A.actor_id
AND A.movie_id = D.movie_id
AND D.director_id = DirP.id
AND DirP.name = 'James Cameron';
```
4) Which people in the database have acted in a movie directed by James Cameron?

*an alternate answer using set membership and a subquery:*

```sql
SELECT id, name
FROM Person
WHERE id IN (SELECT A.actor_id
               FROM Actor A, Director D, Person P
               WHERE A.movie_id = D.movie_id
               AND D.director_id = P.id
               AND P.name = 'James Cameron');
```

*a third answer that also uses a subquery:*

```sql
SELECT DISTINCT P.id, P.name
FROM Person P, Actor A, Director D
WHERE P.id = A.actor_id
  AND A.movie_id = D.movie_id
  AND D.director_id = (SELECT id
                         FROM Person
                         WHERE name = 'James Cameron');
```
5) Which movie ratings have an average runtime that is greater than 120 minutes?

```
SELECT rating, AVG(runtime)
FROM Movie
GROUP BY rating
HAVING AVG(runtime) > 120;
```

6) For each person in the database born in Boston, find the number of movies in the database (possibly 0) in which the person has acted.

```
SELECT name, COUNT(movie_id)
FROM Person LEFT OUTER JOIN Actor
  ON id = actor_id
WHERE pob LIKE 'Boston, Mass%' 
GROUP BY name;
```