

MySQL Exercise 11: Answer Key

Question 1:

```
%%sql
SELECT DISTINCT dimension
FROM dogs;
```

Question 2:

```
%%sql
SELECT d.dog_guid AS dogID, d.dimension AS dimension, count(c.created_at) AS
numtests
FROM dogs d, complete_tests c
WHERE d.dog_guid=c.dog_guid
GROUP BY dogID
LIMIT 100;
```

Question 3:

```
%%sql
SELECT d.dog_guid AS dogID, d.dimension AS dimension, count(c.created_at) AS
numtests
FROM dogs d JOIN complete_tests c
ON d.dog_guid=c.dog_guid
GROUP BY dogID
LIMIT 100;
```

Question 4:

```
%%sql
SELECT dimension, AVG(numtests_per_dog.numtests) AS avg_tests_completed
FROM( SELECT d.dog_guid AS dogID, d.dimension AS dimension, count(c.created_at)
AS numtests
      FROM dogs d, complete_tests c
      WHERE d.dog_guid=c.dog_guid
      GROUP BY dogID) AS numtests_per_dog
GROUP BY numtests_per_dog.dimension;
```

OR

```
%%sql
SELECT dimension, AVG(numtests_per_dog.numtests) AS avg_tests_completed
FROM( SELECT d.dog_guid AS dogID, d.dimension AS dimension, count(c.created_at)
AS numtests
      FROM dogs d JOIN complete_tests c
      ON d.dog_guid=c.dog_guid
      GROUP BY dogID) AS numtests_per_dog
GROUP BY numtests_per_dog.dimension;
```

Question 5:

```
%%sql
SELECT dimension, COUNT(DISTINCT dogID) AS num_dogs
FROM( SELECT d.dog_guid AS dogID, d.dimension AS dimension
      FROM dogs d JOIN complete_tests c
      ON d.dog_guid=c.dog_guid
      WHERE d.dimension IS NULL OR d.dimension=""
      GROUP BY dogID) AS dogs_in_complete_tests
GROUP BY dimension;
```

Question 6:

```
%%sql
SELECT d.breed, d.weight, d.exclude, MIN(c.created_at) AS first_test,
MAX(c.created_at) AS last_test, count(c.created_at) AS numtests
FROM dogs d JOIN complete_tests c
  ON d.dog_guid=c.dog_guid
WHERE d.dimension=""
GROUP BY d.dog_guid;
```

Question 7:

```
%%sql
SELECT dimension, AVG(numtests_per_dog.numtests) AS avg_tests_completed,
COUNT(DISTINCT dogID)
FROM( SELECT d.dog_guid AS dogID, d.dimension AS dimension, count(c.created_at)
      AS numtests
      FROM dogs d JOIN complete_tests c
      ON d.dog_guid=c.dog_guid
      WHERE (dimension IS NOT NULL AND dimension!="") AND (d.exclude IS NULL
      OR d.exclude=0)
      GROUP BY dogID) AS numtests_per_dog
GROUP BY numtests_per_dog.dimension;
```

Question 8:

```
%%sql
SELECT DISTINCT breed_group
FROM dogs;
```

Question 9:

```
%%sql
SELECT d.breed, d.weight, d.exclude, MIN(c.created_at) AS first_test,
MAX(c.created_at) AS last_test, count(c.created_at) AS numtests
FROM dogs d JOIN complete_tests c
  ON d.dog_guid=c.dog_guid
WHERE breed_group IS NULL
GROUP BY d.dog_guid;
```

Question 10:

%%sql

```
SELECT breed_group, AVG(numtests_per_dog.numtests) AS avg_tests_completed,
COUNT(DISTINCT dogID)
FROM( SELECT d.dog_guid AS dogID, d.breed_group AS breed_group,
        count(c.created_at) AS numtests
        FROM dogs d JOIN complete_tests c
        ON d.dog_guid=c.dog_guid
        WHERE d.exclude IS NULL OR d.exclude=0
        GROUP BY dogID) AS numtests_per_dog
GROUP BY breed_group;
```

Question 11:

%%sql

```
SELECT breed_group, AVG(numtests_per_dog.numtests) AS avg_tests_completed,
COUNT(DISTINCT dogID)
FROM( SELECT d.dog_guid AS dogID, d.breed_group AS breed_group,
        count(c.created_at) AS numtests
        FROM dogs d JOIN complete_tests c
        ON d.dog_guid=c.dog_guid
        WHERE d.exclude IS NULL OR d.exclude=0
        GROUP BY dogID) AS numtests_per_dog
GROUP BY breed_group
HAVING breed_group IN ('Sporting','Hound','Herding','Working');
```

Question 12:

%%sql

```
SELECT DISTINCT breed_group
FROM dogs;
```

Question 13:

%%sql

```
SELECT breed_type, AVG(numtests_per_dog.numtests) AS avg_tests_completed,
COUNT(DISTINCT dogID)
FROM( SELECT d.dog_guid AS dogID, d.breed_type AS breed_type,
        count(c.created_at) AS numtests
        FROM dogs d JOIN complete_tests c
        ON d.dog_guid=c.dog_guid
        WHERE d.exclude IS NULL OR d.exclude=0
        GROUP BY dogID) AS numtests_per_dog
GROUP BY breed_type;
```

Question 14:

%%sql

```
SELECT d.dog_guid AS dogID, d.breed_type AS breed_type,
       CASE WHEN d.breed_type='Pure Breed' THEN 'pure_breed'
            ELSE 'not_pure_breed'
       END AS pure_breed,
       count(c.created_at) AS numtests
FROM dogs d, complete_tests c
WHERE d.dog_guid=c.dog_guid
GROUP BY dogID
LIMIT 50
```

Question 15:

%%sql

```
SELECT numtests_per_dog.pure_breed AS pure_breed,
       AVG(numtests_per_dog.numtests) AS avg_tests_completed, COUNT(DISTINCT dogID)
FROM( SELECT d.dog_guid AS dogID, d.breed_group AS breed_type,
            CASE WHEN d.breed_type='Pure Breed' THEN 'pure_breed'
                 ELSE 'not_pure_breed'
            END AS pure_breed,
            count(c.created_at) AS numtests
      FROM dogs d JOIN complete_tests c
            ON d.dog_guid=c.dog_guid
            WHERE d.exclude IS NULL OR d.exclude=0
            GROUP BY dogID) AS numtests_per_dog
GROUP BY pure_breed;
```

Question 16:

%%sql

```
SELECT numtests_per_dog.pure_breed AS pure_breed, neutered,
       AVG(numtests_per_dog.numtests) AS avg_tests_completed, COUNT(DISTINCT dogID)
FROM( SELECT d.dog_guid AS dogID, d.breed_group AS breed_type, d.dog_fixed AS
            neutered,
            CASE WHEN d.breed_type='Pure Breed' THEN 'pure_breed'
                 ELSE 'not_pure_breed'
            END AS pure_breed,
            count(c.created_at) AS numtests
      FROM dogs d JOIN complete_tests c
            ON d.dog_guid=c.dog_guid
            WHERE d.exclude IS NULL OR d.exclude=0
            GROUP BY dogID) AS numtests_per_dog
GROUP BY pure_breed, neutered;
```

Question 17:

%%sql

```
SELECT dimension, AVG(numtests) AS avg_tests_completed, COUNT(DISTINCT
dogID),
STDDEV(numtests)
FROM( SELECT d.dog_guid AS dogID, d.dimension AS dimension, count(c.created_at)
      AS numtests
      FROM dogs d JOIN complete_tests c
      ON d.dog_guid=c.dog_guid
      WHERE (dimension IS NOT NULL AND dimension!="") AND (d.exclude IS NULL
      OR d.exclude=0)
      GROUP BY dogID) AS numtests_per_dog
GROUP BY numtests_per_dog.dimension;
```

Question 18:

%%sql

```
SELECT d.breed_type AS breed_type,
AVG(TIMESTAMPDIFF(minute,e.start_time,e.end_time)) AS AvgDuration,
STDDEV(TIMESTAMPDIFF(minute,e.start_time,e.end_time)) AS StdDevDuration
FROM dogs d JOIN exam_answers e
ON d.dog_guid=e.dog_guid
WHERE TIMESTAMPDIFF(minute,e.start_time,e.end_time)>0
GROUP BY breed_type;
```