A database (NZWeather.mdb) contains information on several weather stations in New Zealand. Daily rainfall (in mm) and daily potential evapotranspiration (PET) values are provided for two stations. Answer the following questions using these data. Turn in a copy of your SQL statements that produce the information requested (and only the information requested).

1. How many unique days of data exist for each station? Fulfill this request using two separate queries – one query for each station.

   For Chirstchurch Airport:

   SELECT Count (*) AS DCAir

   FROM (SELECT DISTINCT YearNew, Month, Day

   FROM (ChristchurchAirport)) AS DistDtsAir;

   For Winchmore:

   SELECT Count (*) AS DCWmore

   FROM (SELECT DISTINCT YearNew, Month, Day

   FROM (Winchmore)) AS DistDtsWmore;

2. Show the dates and rainfall amounts for Christchurch when rainfall occurred.

   SELECT YearNew, Month, Day, Rainfall

   FROM ChristchurchAirport

   WHERE Rainfall > 0;

3. For each year, determine the number of days with daily rainfall amounts greater than 5 mm. Create a table that allows you to compare the results for Christchurch and for Winchmore. [*Hint:* GROUP BY]

   a. First, write a query that selects the requested information at Christchurch. Run the query to verify that it works. Save the query when finished.

      ```
      SELECT ChristchurchAirport.YearNew, COUNT(ChristchurchAirport.Rainfall)
      AS CARain
      FROM ChristchurchAirport
      WHERE ChristchurchAirport.Rainfall > 5
      GROUP BY ChristchurchAirport.YearNew;
      ```

   b. Create another query for Winchmore.

```
SELECT Winchmore.YearNew, COUNT(Winchmore.Rainfall) AS WMRain
FROM Winchmore
WHERE Winchmore.Rainfall > 5
GROUP BY Winchmore.YearNew;
```

c. Create a third query that will generate the final table. Reference the first two queries to create this table.

```
SELECT Qca.Year, Qca.CARain, Qwm.WMRain
FROM Qca INNER JOIN Qwm ON Qca.Year  = Qwm.Year;
```

d. Review the three queries. How could you have generated the requested table using a single query?

```
SELECT Qca.YearNew AS Year, Qca.CARain, Qwm.WMRain
 FROM
(SELECT ChristchurchAirport.YearNew, COUNT (ChristchurchAirport.Rainfall) AS
CARain
FROM ChristchurchAirport
WHERE ChristchurchAirport.Rainfall > 5
GROUP BY ChristchurchAirport.YearNew ) AS Qca

INNER JOIN

(SELECT Winchmore.YearNew, COUNT(Winchmore.Rainfall) AS WMRain
FROM Winchmore
WHERE Winchmore.Rainfall > 5
GROUP BY Winchmore.YearNew) AS Qwm

ON Qca.YearNew  = Qwm.YearNew;
```

4. On what days did rainfall occur at both Christchurch and Winchmore?

```
SELECT Qca.YearNew AS Year, Qca.Month, Qca.Day, Qca.CARain, Qwm.WMRain
 FROM
(SELECT ChristchurchAirport.YearNew, ChristchurchAirport.Rainfall AS CARain,
ChristchurchAirport.Month, ChristchurchAirport.Day
FROM ChristchurchAirport
WHERE ChristchurchAirport.Rainfall > 0) AS Qca
 INNER JOIN
 (SELECT Winchmore.YearNew, Winchmore.Rainfall AS WMRain, Winchmore.Month,
Winchmore.Day
FROM Winchmore
WHERE Winchmore.Rainfall > 0) AS Qwm
```

ON (Qca.YearNew = Qwm.YearNew) AND (Qca.Month = Qwm.Month) AND (Qca.Day = Qwm.Day);

5. What was the total annual rainfall (in inches) at Christchurch for each year in the table?

   SELECT ChristchurchAirport.YearNew AS Year, SUM (ChristchurchAirport.Rainfall) AS Rainfall
   FROM ChristchurchAirport
   WHERE ChristchurchAirport.Rainfall > 0
   GROUP BY ChristchurchAirport.YearNew;

6. What was the average of the annual rainfall (in inches) at Christchurch for the entire time period included in the table? (*Hint:* start with your answer to Query 5)

   SELECT AVG(ChristchurchAirport.Rainfall) AS Rainfall
   FROM ChristchurchAirport
   WHERE ChristchurchAirport.Rainfall > 0;

   Average = 4.8751835536