Practice 5

Determine the validity of the following statements. Circle either True or False.

1. Group functions work across many rows to produce one result.
   True/False
2. Group functions include nulls in calculations.
   True/False
3. The WHERE clause restricts rows prior to inclusion in a group calculation.
   True/False
4. Display the highest, lowest, sum, and average salary of all employees. Label the columns Maximum, Minimum, Sum, and Average, respectively. Round your results to the decimal position. Save your SQL statement in a file called *p5q4.sql*.

```
Maximum   Minimum     Sum Average
-------   -------  ----- -------
   5000       800  29025    2073
```

5. Modify *p5q4.sql* to display the minimum, maximum, sum, and average salary for each job type. Resave to a file called *p5q5.sql*. Rerun your query.

```
JOB         Maximum  Minimum      Sum  Average
---------- -------- -------- -------- --------
ANALYST        3000     3000     6000     3000
CLERK          1300      800     4150     1038
MANAGER        2975     2450     8275     2758
PRESIDENT      5000     5000     5000     5000
SALESMAN       1600     1250     5600     1400
```

6. Write a query to display the number of people with the same job.

```
JOB         COUNT(*)
---------- --------
ANALYST            2
CLERK              4
MANAGER            3
PRESIDENT          1
SALESMAN           4
```

Practice 5 (continued)

7. Determine the number of managers without listing them. Label the column Number of Managers.

SELECT COUNT(DISTINCT mgr) FROM Emp

```
Number of Managers
------------------
                 6
```

8. Write a query that will display the difference between the highest and lowest salaries. Label the column DIFFERENCE.

select max(Sal) - min(Sal)

```
DIFFERENCE
----------
      4200
```

If you have time, complete the following exercises:

9. Display the manager number and the salary of the lowest paid employee for that manager. Exclude anyone where the manager id is not known. Exclude any groups where the minimum salary is less than $1000. Sort the output in descending order of salary.

```
Select mgr, MIN(Sal)
From Emp
WHERE mgr IS NOT NULL
Group By mgr
Having MIN(Sal) > 1000
order By MIN(Sal) DESC
```

MGR	MIN(SAL)
7566	3000
7839	2450
7782	1300
7788	1100

10. Write a query to display the department name, location name, number of employees, and the average salary for all employees in that department. Label the columns dname, loc, Number of People, and Salary, respectively.

DNAME	LOC	Number of People	Salary
ACCOUNTING	NEW YORK	3	2916.67
RESEARCH	DALLAS	5	2175
SALES	CHICAGO	6	1566.67

```
Select  d.dname, d.loc, count(*) "Number of People",
        AVG(Sal) "Salary"
From    Emp E, dept d
Where   e.deptno = d.deptno
Group By d.dname, d.loc;
```

Decode fun 3.37

Practice 5 (continued)

If you want extra challenge, complete the following exercises:

11. Create a query that will display the total number of employees and of that total the number who were hired in 1980, 1981, 1982, and 1983. Give appropriate column headings.

TOTAL	1980	1981	1982	1983
14	1	10	2	1

12. Create a matrix query to display the job, the salary for that job based upon department number and the total salary for that job for all departments, giving each column an appropriate heading.

Job	Dept 10	Dept 20	Dept 30	Total
ANALYST		6000		6000
CLERK	1300	1900	950	4150
MANAGER	2450	2975	2850	8275
PRESIDENT	5000			5000
SALESMAN			5600	5600

```
SELECT COUNT(*) TOTAL,
       SUM(DECODE(TO_CHAR(hiredate,'YYYY'),
                  1980,1,0)) "1980"
       SUM(DECODE(TO_CHAR(hiredate,'YYYY'),
                  1981,1,0)) "1981"
       SUM(DECODE(TO_CHAR(hiredate,'YYYY'),
                  1982,1,0)) "1982"
       SUM(DECODE(TO_CHAR(hiredate,'YYYY'),
                  1987,1,0)) "1987"
FROM EMP;
```