1. Will the below statements execute successfully? If the answer is no, fix the statements so that they can be executed

a)
```
SELECT *,
FROM employees;
```

b)
```
SELECT employee_id AS Id, first_name 'First Name', last_name AS Last Name
FROM employees
```

c)
```
SELECT CONCAT(first_name, ' ' last_name)
FROM employees
```

d)
```
SELECT REPLACE(salary, 0, 1) 'New Sal'
FROM employees
```

e)
```
SELECT REVERSE(salary, 0, 1) 'New Sal'
FROM employees;
```

f)
```
SELECT SUBSTRING(salary, 1, 2) 'New Sal'
FROM employees
```

2. Write a query that will return the employee_id, surname, salary and commission percentage for all the employees who do not have a commission. Sort your results with the person who earns the least first.

	employee_id	last_name	salary	commission_pct
1	132	Olson	2100.00	NULL
2	128	Markle	2200.00	NULL
3	136	Philtanker	2200.00	NULL
4	135	Gee	2400.00	NULL
5	127	Landry	2400.00	NULL
••••				

72 rows returned

3. Modify the previous statement such that the commission_pct column reads 'No commission' instead of NULL

	employee_id	last_name	salary	commission_pct
1	132	Olson	2100.00	No commission
2	128	Markle	2200.00	No commission
3	136	Philtanker	2200.00	No commission
4	135	Gee	2400.00	No commission
5	127	Landry	2400.00	No commission
••••				

72 rows returned

4. Write a query that will display the employee number, followed by the employee's initials (first letter of the name, followed by a dot, first letter of the surname, followed by a dot) and the manager information. This column should have 'No manager' if the employee is not assigned a manager and 'Manager No: <manager_id>' if the person has a manager.

	employee_id	Initials	Manager Info
1	100	S.K.	No Manager
2	101	N.K.	Manager No:100
3	102	L.D.	Manager No:100
4	103	A.H.	Manager No:102
5	104	B.E.	Manager No:103

••••

107 rows returned

5. Write the SQL statement that will display the name, salary, commission percentage and total salary of all the employees in department 20, 40 and 80. If the person has no commission percentage then the third column should display a zero. The total salary is to be calculated as follows salary + (salary * commission_pct). You are to sort the results first by department number and then by name.

	Name	salary	commission %	Total Salary
1	Michael	13000.00	0.00	13000.0000
2	Pat	6000.00	0.00	6000.0000
3	Susan	6500.00	0.00	6500.0000
4	Alberto	12000.00	0.30	15600.0000
5	Allan	9000.00	0.35	12150.0000

••••

37 rows returned

6. Write a query that will display the name, surname and department for all the employees who earn a salary between 7000 and 8000. The last column should be named 'Dep Info' and should display the department_id if it exists, but otherwise the department part of the job_id is to be included. You are to sort your answer using the department_id, surname and then name.

	first_name	last_name	Dep Info
1	Kimberely	Grant	SA
2	Payam	Kaufling	50
3	Matthew	Weiss	50
4	Elizabeth	Bates	80
5	Nanette	Cambrault	80

••••

14 rows returned

7. Write a query that will display the name, surname and commissioned salary of all the employees who work in departments 40 and 80 and whose surname includes an 'a'. Commission salary will be null if the total salary is equal to the salary but if the employee earns a commission, then the commissioned salary will display the total salary. Sort the result using the commissioned salary, then the surname

	Name	Surname	Total Salary
1	Susan	Mavris	NULL
2	Sundita	Kumar	6710.0000
3	Amit	Banda	6820.0000
4	Sundar	Ande	7040.0000
5	Mattea	Marvins	7920.0000

••••

16 rows returned

8. Write a query that will display the employee name and surname and the job grade. The job grade is calculated on the job_id according to the below criteria.

Job	***Grade***
AD_PRES	A
ST_MAN	B
IT_PROG	C
SA_REP	D
ST_CLERK	E
None of the above	0

Sort your answer using the name.

	first_name	last_name	Grade
1	Adam	Fripp	B
2	Alana	Walsh	0
3	Alberto	Errazuriz	0
4	Alexander	Hunold	C
5	Alexander	Khoo	0

••••

107 rows returned

9. Write a query that will return the salary, revised commission salary, the largest Integer smaller or equal to the revised commission salary, the smallest integer greater or equal to the revised salary and the salary to the nearest hundred and nearest thousand. The revised commission salary should be calculated by multiplying the salary with the commission percentage which is increased by 1.25%. You are to retrieve only those employees who have a commission value assigned to them.

	salary	Revised commission salary	Largest Integer <= to value	Smallest Integer >= to value	Nearest 100	Nearest 1000
1	14000.00	5775.000000	5775	5775	5800.000000	6000.000000
2	13500.00	4218.750000	4218	4219	4200.000000	4000.000000
3	12000.00	3750.000000	3750	3750	3800.000000	4000.000000
4	11000.00	3437.500000	3437	3438	3400.000000	3000.000000
5	10500.00	2231.250000	2231	2232	2200.000000	2000.000000

••••

35 rows returned

10. The below query has been written by a programmer but incorrectly displays the salary earned through commission as the answer is negative. You are to suggest 3 different ways how this error can be fixed.

```
SELECT salary - (salary + (salary * commission_pct)) 'Salary from commission'
FROM employees
WHERE commission_pct IS NOT NULL;
```

11. Write an SQL statement that will display the name, job_id and department columns. The department column should read 'Administration' if the job_id contains 'AD', 'Human resources' if it has 'HR' and 'Other' for all the rest. Sort the results using the department column

	first_name	job_id	Department
1	Steven	AD_PRES	Administration
2	Neena	AD_VP	Administration
3	Lex	AD_VP	Administration
4	Jennifer	AD_ASST	Administration
5	Susan	HR_REP	Human resources
6	Hermann	PR_REP	Other

••••

107 rows returned

12. Write a query that will display the following sentence for each employee:
A salary of <cubed salary> would be a real boost to <surname>.
You are to use a function to calculate the cubed salary

	(No column name)
1	A salary of 13824000000000.00 would be a real boost to King
2	A salary of 4913000000000.00 would be a real boost to Kochhar
3	A salary of 4913000000000.00 would be a real boost to De Haan
4	A salary of 729000000000.00 would be a real boost to Hunold
5	A salary of 216000000000.00 would be a real boost to Ernst

••••

107 rows returned

13. Write the SQL statement that will display the name, surname, salary and pay indicator. The pay indicator will display 'Low Pay' if the salary is less than 4000, 'Medium pay' for non managers with a pay in the range 4000-9000, 'Underpaid Manager' for managers (have MAN in job_id) with a pay in the range 4000-10000, otherwise 'Good Pay' is displayed. Sort your answer using the first column.

	Name	Surname	salary	Pay Indicator
1	Adam	Fripp	8200.00	Underpaid manager
2	Alana	Walsh	3100.00	Low Pay
3	Alberto	Errazuriz	12000.00	Good pay
4	Alexander	Hunold	9000.00	Medium Pay
5	Alexander	Khoo	3100.00	Low Pay

107 rows returned

14. You are to explain the difference between ROUND(123.45,1) and ROUND(123.45,1,1).

15. Write a query that will display the name and surname of all the employees, together with the hire date and the date which signifies the end of the probation. The probation is six months long. The first column should be named 'Full Name', the second should be named 'Employment Date' and the last column should be named 'Probation Date'

	Full Name	Employment Date	Probation Date
1	Steven King	1987-06-17 00:00:00.000	1987-12-17 00:00:00.000
2	Neena Kochhar	1989-09-21 00:00:00.000	1990-03-21 00:00:00.000
3	Lex De Haan	1993-01-13 00:00:00.000	1993-07-13 00:00:00.000
4	Alexander Hunold	1990-01-03 00:00:00.000	1990-07-03 00:00:00.000
5	Bruce Ernst	1991-05-21 00:00:00.000	1991-11-21 00:00:00.000

107 rows returned

16. Write a query that will display 4 columns with the number of days, months, hours and minutes since the new year. You are to rename the columns as shown below. The below screenshot is just for demonstration purposes as the you will execute the statement on a different date

	No. of days since new year	No of months passed since new year	Hours passed since new year	Minutes passed since new year
1	73	2	1771	106272

17. Write a query that will display all the employees who work as SA_REP. For each employee that falls in this category you are to display the employee_id, hire_date and Certificate Deadline. The last column should display the final date (10 days after the date employed) when an employee can present his/her original certificates.

	employee_id	hire_date	Certificate Deadline
1	150	1997-01-30 00:00:00.000	Feb 9 1997 12:00AM
2	151	1997-03-24 00:00:00.000	Apr 3 1997 12:00AM
3	152	1997-08-20 00:00:00.000	Aug 30 1997 12:00AM
4	153	1998-03-30 00:00:00.000	Apr 9 1998 12:00AM
5	154	1998-12-09 00:00:00.000	Dec 19 1998 12:00AM

••••

30 rows returned

18. Modify the previous statement such that the Certificate Deadline column is represented in dd.mm.yy format as shown below

	employee_id	hire_date	Certificate Deadline
1	150	1997-01-30 00:00:00.000	09.02.1997
2	151	1997-03-24 00:00:00.000	03.04.1997
3	152	1997-08-20 00:00:00.000	30.08.1997
4	153	1998-03-30 00:00:00.000	09.04.1998
5	154	1998-12-09 00:00:00.000	19.12.1998

••••

30 rows returned

19. Write a query that will display the last day of the month if the current date is added by 3 months.

20. Write a query that will return the hire date of employees with a surname of either De Haan, Khoo and Taylor. You are to display the details in this format:
<surname> was hired on <day of week>, <day>, <Month> <year>

	Detail
1	De Haan was hired on Wednesday, 13, January 1993
2	Khoo was hired on Thursday, 18, May 1995
3	Taylor was hired on Tuesday, 24, March 1998
4	Taylor was hired on Saturday, 24, January 1998

4 rows returned