0.
1)
Dona el mateix resultat.

```
SQL> SELECT city, COUNT(department_id) AS department_name
  2  FROM locations l NATURAL JOIN departments d
  3* GROUP BY city;

CITY                          DEPARTMENT_NAME
_____  _____
Toronto                                      1
London                                       1
Munich                                       1
Southlake                                    1
South San Francisco                          1
Seattle                                     21
Oxford                                       1

7 rows selected.
```

2)
Amb naturalo no mostra el mateix resultat

```
SQL> SELECT city, NVL(COUNT(department_id), 0) AS department_name
  2  FROM locations l NATURAL JOIN departments d
  3* GROUP BY city;

CITY                          DEPARTMENT_NAME
_____  _____
Toronto                                      1
London                                       1
Munich                                       1
Southlake                                    1
South San Francisco                          1
Seattle                                     21
Oxford                                       1

7 rows selected.
```

3)
Dona el mateix resultat

```
SQL> SELECT city, NVL(COUNT(department_id), 0) AS department_name
  2  FROM locations l NATURAL JOIN departments d
  3  GROUP BY city
  4* HAVING COUNT(d.department_id) > 1;

CITY            DEPARTMENT_NAME
_____      _____
Seattle                          21
```

4)

no motra el mateix resultat

```
SQL> SELECT d.department_name,
  2         c.country_name,
  3         NVL(COUNT(e.employee_id), 0) AS num_empleats,
  4         SUM(e.salary) AS salary,
  5         AVG(e.salary) AS mitjana
  6  FROM employees e
  7  NATURAL JOIN departments d
  8  NATURAL JOIN locations l
  9  NATURAL JOIN countries c
 10  GROUP BY d.department_name, c.country_name
 11* ORDER BY c.country_name ASC , mitjana DESC;

DEPARTMENT_NAME    COUNTRY_NAME                    NUM_EMPLEATS    SALARY    MITJANA
_____   _____   _____   _____   _____
Marketing          Canada                                    1      6000       6000
Sales              United Kingdom                            6     51000       8500
Executive          United States of America                  2     34000      17000
Accounting         United States of America                  1      8300       8300
Finance            United States of America                  5     39600       7920
IT                 United States of America                  4     19800       4950
Shipping           United States of America                  8     25400       3175
Purchasing         United States of America                  5     13900       2780

8 rows selected.
```

5)

no mostra el mateix resultat

```
SQL> SELECT d.department_name,
  2         c.country_name,
  3         NVL(COUNT(e.employee_id), 0) AS num_empleats,
  4         SUM(e.salary) AS salary,
  5         AVG(e.salary) AS mitjana
  6  FROM employees e
  7  NATURAL LEFT OUTER JOIN departments d
  8  NATURAL LEFT OUTER JOIN locations l
  9  NATURAL LEFT OUTER JOIN countries c
 10  GROUP BY d.department_name, c.country_name
 11* ORDER BY c.country_name ASC , mitjana DESC;

DEPARTMENT_NAME      COUNTRY_NAME                     NUM_EMPLEATS    SALARY    MITJANA
_____ _____ _____ _____ _____
Marketing            Canada                                      1      6000      6000
Sales                United Kingdom                              6     51000      8500
Executive            United States of America                    2     34000     17000
Accounting           United States of America                    1      8300      8300
Finance              United States of America                    5     39600      7920
IT                   United States of America                    4     19800      4950
Shipping             United States of America                    8     25400      3175
Purchasing           United States of America                    5     13900      2780
                                                               75    493416   6578,88

9 rows selected.
```

6)

no mostra el mateix resultat

```
SQL> SELECT c.country_name AS Pais,
  2         NVL(COUNT(e.employee_id), 0) AS Número_de_empleats
  3  FROM employees e
  4  NATURAL JOIN departments d
  5  NATURAL JOIN locations l
  6  NATURAL JOIN countries c
  7* GROUP BY c.country_name;


PAIS                                     NÚMERO_DE_EMPLEATS
_____ _____
United States of America                         25
Canada                                            1
United Kingdom                                     6
```

7)
No mostra el mateix resultat

```
SQL> SELECT c.country_name AS Pais,
  2         NVL(COUNT(e.employee_id), 0) AS Número_de_empleats
  3  FROM employees e
  4  NATURAL LEFT OUTER JOIN departments d
  5  NATURAL LEFT OUTER JOIN locations l
  6  NATURAL LEFT OUTER JOIN countries c
  7* GROUP BY c.country_name;

PAIS                                NÚMERO_DE_EMPLEATS
_____ _____
                                                   75
United States of America                           25
Canada                                              1
United Kingdom                                       6
```

8)

9)

10)

1.

```
SQL> SELECT city, COUNT(department_id) AS department_name
  2  FROM locations l JOIN departments d
  3  ON l.location_id=d.location_id
  4* GROUP BY city;


CITY                         DEPARTMENT_NAME
_____  _____
Toronto                                            1
London                                             1
Munich                                             1
Southlake                                          1
South San Francisco                                1
Seattle                                           21
Oxford                                             1

7 rows selected.
```

2.

```
SQL> SELECT city, NVL(COUNT(department_id), 0) AS department_name
  2  FROM locations l LEFT JOIN departments d
  3  ON l.location_id = d.location_id
  4* GROUP BY city;

CITY                           DEPARTMENT_NAME
_____ _____
Sao Paulo                                   0
Toronto                                     1
London                                      1
Munich                                      1
Sydney                                      0
Geneva                                      0
Stretford                                   0
Southlake                                   1
Singapore                                   0
Mexico City                                 0
Hiroshima                                   0
Bern                                        0
Bombay                                      0
Utrecht                                     0
Tokyo                                       0
South San Francisco                         1
Beijing                                     0
Seattle                                    21
South Brunswick                             0
Oxford                                      1
Roma                                        0
Venice                                      0
Whitehorse                                  0

23 rows selected.
```

3.

```
SQL> SELECT city, NVL(COUNT(department_id), 0) AS department_name
  2  FROM locations l LEFT JOIN departments d
  3  ON l.location_id = d.location_id
  4  GROUP BY city
  5* HAVING COUNT(d.department_id) > 1;

CITY              DEPARTMENT_NAME
_____ _____
Seattle                      21
```

4.

```
SQL> SELECT d.department_name,
  2          c.country_name,
  3          NVL(COUNT(e.employee_id), 0) AS num_empleats,
  4          SUM(e.salary) AS salary,
  5          AVG(e.salary) AS mitjana
  6  FROM employees e
  7  JOIN departments d ON e.department_id = d.department_id
  8  JOIN locations l ON d.location_id = l.location_id
  9  JOIN countries c ON l.country_id = c.country_id
 10  GROUP BY d.department_name, c.country_name
 11* ORDER BY c.country_name ASC , mitjana DESC;

DEPARTMENT_NAME      COUNTRY_NAME               NUM_EMPLEATS    SALARY                                       MITJANA
-------------------  -------------------------  ------------    -------    ----------------------------------------
Marketing            Canada                                2     19000                                           9500
Public Relations     Germany                               1     10000                                          10000
Sales                United Kingdom                       34    304500    8955,8823529411764705882352941176470588824
Human Resources      United Kingdom                        1      6500                                           6500
Executive            United States of America              3     58000     19333,333333333333333333333333333333333333
Accounting           United States of America              2     20308                                          10154
Finance              United States of America              6     51608    8601,3333333333333333333333333333333333333
IT                   United States of America              5     28800                                           5760
Administration       United States of America              1      4400                                           4400
Purchasing           United States of America              6     24900                                           4150
Shipping             United States of America             45    156400    3475,5555555555555555555555555555555555556

11 rows selected.
```

5.

```
SQL> SELECT d.department_name,
  2          c.country_name,
  3          NVL(COUNT(e.employee_id), 0) AS num_empleats,
  4          SUM(e.salary) AS salary,
  5          AVG(e.salary) AS mitjana
  6  FROM employees e
  7  LEFT OUTER JOIN departments d ON e.department_id = d.department_id
  8  LEFT OUTER JOIN locations l ON d.location_id = l.location_id
  9  LEFT OUTER JOIN countries c ON l.country_id = c.country_id
 10  GROUP BY d.department_name, c.country_name
 11* ORDER BY c.country_name ASC , mitjana DESC;

DEPARTMENT_NAME      COUNTRY_NAME               NUM_EMPLEATS    SALARY                                       MITJANA
-------------------  -------------------------  ------------    -------    ----------------------------------------
Marketing            Canada                                2     19000                                           9500
Public Relations     Germany                               1     10000                                          10000
Sales                United Kingdom                       34    304500    8955,8823529411764705882352941176470588824
Human Resources      United Kingdom                        1      6500                                           6500
Executive            United States of America              3     58000     19333,333333333333333333333333333333333333
Accounting           United States of America              2     20308                                          10154
Finance              United States of America              6     51608    8601,3333333333333333333333333333333333333
IT                   United States of America              5     28800                                           5760
Administration       United States of America              1      4400                                           4400
Purchasing           United States of America              6     24900                                           4150
Shipping             United States of America             45    156400    3475,5555555555555555555555555555555555556
                                                           1      7000                                           7000

12 rows selected.
```

6.

```
SQL> SELECT c.country_name AS Pais,
  2          NVL(COUNT(e.employee_id), 0) AS Número_de_empleats
  3   FROM employees e
  4   JOIN departments d ON e.department_id = d.department_id
  5   JOIN locations l ON d.location_id = l.location_id
  6   JOIN countries c ON l.country_id = c.country_id
  7*  GROUP BY c.country_name;


PAIS                             NÚMERO_DE_EMPLEATS
_____   _____
Germany                                             1
United States of America                           68
Canada                                              2
United Kingdom                                      35
```

7.

```
SQL> SELECT c.country_name AS Pais,
  2          NVL(COUNT(e.employee_id), 0) AS Número_de_empleats
  3   FROM employees e
  4   LEFT OUTER JOIN departments d ON e.department_id = d.department_id
  5   LEFT OUTER JOIN locations l ON d.location_id = l.location_id
  6   LEFT OUTER JOIN countries c ON l.country_id = c.country_id
  7*  GROUP BY c.country_name;

PAIS                             NÚMERO_DE_EMPLEATS
_____   _____
Germany                                             1
                                                    1
United States of America                           68
Canada                                              2
United Kingdom                                      35
```

8.

```
SQL> SELECT
  2      e.first_name || ' ' || e.last_name AS Nom,
  3      TO_CHAR(e.hire_date, 'DD/MM/YY') AS Data_con,
  4      m.first_name || ' ' || m.last_name AS Cap,
  5      d.department_name AS Departament_del_cap,
  6      j.job_title AS Ocupació_del_cap
  7  FROM employees e
  8  LEFT JOIN employees m ON e.manager_id = m.employee_id
  9  LEFT JOIN departments d ON m.department_id = d.department_id
 10  LEFT JOIN jobs j ON m.job_id = j.job_id
 11* ORDER BY e.employee_id;
```

NOM	DATA_CON	CAP	DEPARTAMENT_DEL_CAP	OCUPACIÓ_DEL_CAP
Steven King	17/06/03			
Neena Kochhar	21/09/05	Steven King	Executive	President
Lex De Haan	13/01/01	Steven King	Executive	President
Alexander Hunold	03/01/06	Lex De Haan	Executive	Administration Vice President
Bruce Ernst	21/05/07	Alexander Hunold	IT	Programmer
David Austin	25/06/05	Alexander Hunold	IT	Programmer
Valli Pataballa	05/02/06	Alexander Hunold	IT	Programmer

9.

```
SQL> SELECT
  2      e.first_name || ' ' || e.last_name AS Nom,
  3      TO_CHAR(jb.start_date, 'DD MONTH YYYY') AS Data_inici,
  4      TO_CHAR(jb.end_date, 'DD Mon YYYY') AS Data_fi,
  5      d.department_name AS Departament,
  6      j.job_title AS Ocupació
  7  FROM employees e
  8  JOIN departments d ON e.department_id = d.department_id
  9  JOIN job_history jb ON e.employee_id = jb.employee_id
 10  JOIN jobs j ON e.job_id = j.job_id
 11* ORDER BY jb.start_date, e.employee_id;
```

NOM	DATA_INICI	DATA_FI	DEPARTAMENT	OCUPACIÓ
Jennifer Whalen	17 SETEMBRE 1995	17 Juny 2001	Administration	Administration Assistant
Neena Kochhar	21 SETEMBRE 1997	27 Oct. 2001	Executive	Administration Vice President
Lex De Haan	13 GENER 2001	24 Jul. 2006	Executive	Administration Vice President
Neena Kochhar	28 OCTUBRE 2001	15 Març 2005	Executive	Administration Vice President
Jennifer Whalen	01 JULIOL 2002	31 Des. 2006	Administration	Administration Assistant
Michael Hartstein	17 FEBRER 2004	19 Des. 2007	Marketing	Marketing Manager
Den Raphaely	24 MARÇ 2006	31 Des. 2007	Purchasing	Purchasing Manager
Jonathon Taylor	24 MARÇ 2006	31 Des. 2006	Sales	Sales Representative
Payam Kaufling	01 GENER 2007	31 Des. 2007	Shipping	Stock Manager
Jonathon Taylor	01 GENER 2007	31 Des. 2007	Sales	Sales Representative

```
10 rows selected.
```

10.

```
SQL> SELECT
  2      d.department_name AS Departament,
  3      COALESCE(m.first_name || ' ' || m.last_name, 'Sense Cap') AS Nom_i_Cognom_Cap,
  4      e.first_name || ' ' || e.last_name AS Nom_i_Cognom_Empleat
  5  FROM departments d
  6  LEFT JOIN employees m ON d.manager_id = m.employee_id
  7  LEFT JOIN employees e ON d.department_id = e.department_id
  8* ORDER BY d.department_name, Nom_i_Cognom_Empleat;
```

DEPARTAMENT	NOM_I_COGNOM_CAP	NOM_I_COGNOM_EMPLEAT
Accounting	Shelley Higgins	Shelley Higgins
Accounting	Shelley Higgins	William Gietz
Administration	Jennifer Whalen	Jennifer Whalen
Benefits		
Construction		
Contracting		
Control And Credit		
Corporate Tax		