

1)

```
create database FuncionariosDB
use FuncionariosDB
```

```
create table departments (
id int identity primary key,
department_name VARCHAR(255) NOT NULL
)
create table employees (
id int identity primary key,
employee_name VARCHAR(255) NOT NULL,
department_id int,
foreign key (department_id) references departments (id)
)
create table projects(
id int identity primary key,
project_name VARCHAR(255) NOT NULL
)
```

```
create table employee_projects (
employee_id int,
project_id int,
foreign key (employee_id) references employees (id),
foreign key (project_id) references projects (id)
)
INSERT INTO departments ( department_name) VALUES
('Desenvolvimento'),
('Marketing'),
('Vendas'),
('Recursos Humanos')
```

```
INSERT INTO employees (employee_name, department_id) VALUES
( 'Carlos Silva', 1),
( 'Ana Oliveira', 2),
( 'João Souza', 3),
( 'Mariana Santos', 4),
( 'Pedro Lima', 1),
( 'Cláudia Pereira', 2),
( 'Rafael Alves', NULL) -- Sem departamento
```

```
INSERT INTO projects ( project_name) VALUES
( 'Website Redesign'),
( 'Campanha de Marketing'),
( 'Sistema de CRM'),
( 'Onboarding de Funcionários')
```

```
INSERT INTO employee_projects (employee_id, project_id) VALUES
(1, 1), -- Carlos Silva no projeto 'Website Redesign'
(1, 3), -- Carlos Silva no projeto 'Sistema de CRM'
(2, 2), -- Ana Oliveira no projeto 'Campanha de Marketing'
(3, 3), -- João Souza no projeto 'Sistema de CRM'
(4, 4), -- Mariana Santos no projeto 'Onboarding de Funcionários'
(5, 1), -- Pedro Lima no projeto 'Website Redesign'
(6, 2) -- Cláudia Pereira no projeto 'Campanha de Marketing'
```

--A)

```
SELECT employee_name AS name_employee, department_name AS name_department
FROM employees
JOIN departments ON employees.department_id = department_id;
```

--B)

```
SELECT employee_name
FROM employees
WHERE department_id IS NULL;
```

--C)

```
SELECT department_name
FROM departments
LEFT JOIN employees ON employees.department_id = department_id
GROUP BY department_name
```

--D)

```
SELECT employee_id AS nome_funcionario, project_id AS nome_projeto
FROM employee_projects
LEFT JOIN employees ON employee_id = employee_projects.employee_id
LEFT JOIN projects ON employee_projects.project_id = project_id;
```

-- E)

```
SELECT project_name AS nome_projeto, COUNT(employee_projects.employee_id ) AS
num_funcionarios
FROM projects
LEFT JOIN employee_projects ON project_id = employee_projects.project_id
GROUP BY project_name;
```

2)

```
create database VendasDB
use VendasDB
```

```
create table customers(
id int identity primary key,
customer_name varchar(255) not null
)
create table orders(
id int identity primary key,
customer_id int,
order_date date,
foreign key (customer_id) references customers(id)
)
create table products(
id int identity primary key,
product_name varchar(255) not null
)
create table order_items(
id int identity primary key,
order_id int,
product_id int,
quantity int,
foreign key (order_id) references orders(id),
foreign key (product_id) references products(id)
)
```

```
INSERT INTO customers ( customer_name) VALUES
('João Pereira'),
('Maria Souza'),
('Carlos Silva'),
('Ana Oliveira')
```

```
INSERT INTO orders (customer_id, order_date) VALUES
(1, '2024-09-01'),
(2, '2024-09-02'),
(3, '2024-09-03'),
(4, '2024-09-04');
```

```
INSERT INTO products ( product_name) VALUES
( 'Notebook Dell'),
( 'Smartphone Samsung'),
( 'Teclado Mecânico'),
( 'Monitor 24 polegadas')
```

```
INSERT INTO order_items (order_id, product_id, quantity) VALUES
(1, 1, 1), -- João Pereira comprou 1 Notebook Dell
(1, 3, 2), -- João Pereira comprou 2 Teclados Mecânicos
```

(2, 2, 1), -- Maria Souza comprou 1 Smartphone Samsung
(3, 4, 1), -- Carlos Silva comprou 1 Monitor
(4, 1, 1), -- Ana Oliveira comprou 1 Notebook Dell
(4, 4, 1) -- Ana Oliveira comprou 1 Monitor

--A)

```
SELECT customer_name AS nome_cliente, orders.order_id AS id_pedido,  
orders.order_date AS data_pedido  
FROM customers  
JOIN orders ON customers.customer_id = orders.customer_id;
```

--B)

```
SELECT orders.order_id AS id_pedido, products.product_name AS nome_produto,  
order_items.quantity AS quantidade  
FROM orders  
LEFT JOIN order_items ON orders.order_id = order_items.order_id  
LEFT JOIN products ON order_items.product_id = products.product_id;
```

--C)

```
SELECT orders.order_id AS id_pedido, customer_name AS nome_cliente  
FROM customers  
LEFT JOIN orders ON customers.customer_id = orders.customer_id;
```

--D)

```
SELECT customer_name AS nome_cliente, orders.order_id AS id_pedido  
FROM customers  
FULL OUTER JOIN orders ON customers.customer_id = orders.customer_id;
```

--E)

```
SELECT customer_name AS nome_cliente, products.product_name AS nome_produto  
FROM customers  
CROSS JOIN products;
```