Using the my\_guitar\_shop database, write the relational algebra statement(s) necessary to solve the below questions. All of these questions should be solved using a single base table. Add rows to the tables as necessary.

1. List the product name for any product in category 2.

|  |  |
| --- | --- |
| PRODUCTS(\*) | RESULT1⟵ σ(category\_id=2)(PRODUCTS) |
| PRODUCTS(product\_name) | RESULT ⟵ π(product\_name)( RESULT1) |

1. List the order id and customer id for any order that was paid for with a Visa credit/debit card. The column names sould be orderID and customerID.

|  |  |
| --- | --- |
| ORDERS(\*) | RESULT1⟵ σ(card\_type=‘Visa’)(Orders) |
| ORDER(oderID,customerID) | RESULT⟵ ρ(orderID,customerID) π(order\_id,customer\_id)(RESULT1) |

1. List the name of any warehouses have an address is in Missouri.

|  |  |
| --- | --- |
| WAREHOUSES(\*) | RESULT1⟵ σ(wh\_state=’MO’)(WAREHOUSES) |
| WAREHOUSES(wh\_name) | RESULT⟵ π(wh\_name)(RESULT1) |

1. List the tax rate for New Jersey.

|  |  |
| --- | --- |
| STATE\_TAX\_RATES(\*) | RESULT1⟵ σ(state = ‘NJ’)(STATE\_TAX\_RATE) |
| STATE\_TAX\_RATES(tax\_rate) | RESULT ⟵ π(tax\_rate)(RESULT1) |

1. For any customer that has at least three orders, list the customer id and the number of orders for the customer.

|  |  |
| --- | --- |
| ORDERS(customer\_id,num\_customer\_orders) | RESULT1⟵ρ(customer\_id,num\_customer\_orders)(customer\_idℑCOUNT(\*)(ORDERS)) |
| ORDERS(customer\_id,num\_customer\_orders) | RESULT2⟵ σ(num\_customer\_orders≥3)(RESULT1) |
| ~~ORDERS(customer\_id,num\_customer\_orders)~~ | ~~RESULT⟵ π~~~~(customer\_id,num\_customer\_orders)~~~~(RESULT2)~~ |

1. Write the plain English for the following relational algebra statements

|  |  |
| --- | --- |
| SUPPLIERS (\*) | RESULT1 ⟵σ(supplier\_state=’CA’)(SUPPLIERS) |
| SUPPLIERS (supplier\_name) | RESULT ⟵ π (supplier\_name)(RESULT1) |

List the supplier name of suppliers from California (CA).