# Power BI - lesson 5

1. What is a primary key in a table?

Answer: A pirmary key is a unique column in a table that identifies each row (like CustomerID in the Customer table)

2. Name the two types of table relationships in Power BI.

Answer: One-to-many and many-to-many.

3. How do you create a relationship between two tables in Power BI?

Answer: Go to Model View, drag the key column from one table to match with column in antoher table.

4. What is ‘star schema’?

Answer: It’s a model where one central fact table connects to multiple dimension tables, Like Sales in the center, connected to Customer and Products.

5. Which table is typically the fact table in a sales dataset?

Answer: The Sales table - it has quantities, dates and foreign keys.

6. Link sales.csv to Customers.csv using CustomerID (one-to-many).

Answer: In Model View, drag CustomerID from Customer to CustomerID in Sales.

7. Why is ProductID in Sales.csv a foreign key?

Answer: Because it links to the ProductID in the ProductID in the Products table - it’s not unique in Sales.

8. Fix a relationship error where ProductID has mismatched datatypes.

Answer: Go to Power Query, and chnage both ProductID columns to the same data type(like whole number)

9. Explain why a star schema imporev performance.

Answer: It keeps the model clean and fast by avoiding complex joins and loops.

10. Add a new column TotalSales in Sales (Quantity * Price from Products).

Answer: TotalSales = Sales[Quantity] * RELATED(Products[Price])

11. Optimize a model with circular relationships - how would you resolve it?

Answer: Break the loop by removing one relationship or using DAX instead of connecting direclty.

12. Create a role-playing dimension for OrderDate and ShipDate.

Answer: Duplicate the Date table - one for OrderDate, another for ShipDate - then relate each separetly.

13. Handle a many-to-many relationship between Customers adn Products.

Answer: Create a bridge with unique CustomerID + ProductID combinations.

14. Use bidirectional filtering spraringly - when is it appropriate?

Answer: Only when both tables need to filter each other, like for slicers or accurate totals - otherwise, use single-direction to avoid confusion.

15. Write DAX to enforce referential integrity if a CustomerID is deleted.

Answer:

```
ValidSales =
CALCULATE(
COUNTROWS(Sales),
NOT(ISBLANK(RELATED(Customers[CustomerID])))
)
```