Power BI - lesson 9

1. What is row context? Give an example in a calculated column.

Row context means DAX evaluates one row at a time.

Example: `TotalPrice = Sales[Quantity] * Sales[UnitPrice]`

---

2. Write a measure that finds total sales

```
DAX
CopyEdit
Total Sales = SUM(Sales[Quantity] * Sales[UnitPrice])
```

---

3. Use RELATED to fetch the Name from the Customers table into the Sales table.

```
DAX
CopyEdit
Customer Name = RELATED(Customers[Name])
```

---

4. What does `CALCULATE(SUM(Sales[Quantity]), Sales[Category] = "Electronics")` return?

It returns the total quantity sold, but **only for Electronics** category.

---

5. Explain the difference between VAR and RETURN in DAX.

`VAR` stores a value or expression.

`RETURN` outputs the final result using that value.

Example:

```
DAX
CopyEdit
VAR q = SUM(Sales[Quantity])
RETURN q * 10
```

---

6. Create a calculated column in Sales called TotalPrice using row context (Quantity * UnitPrice).

```
DAX
CopyEdit
TotalPrice = Sales[Quantity] * Sales[UnitPrice]
```

---

7. Write a measure Electronics Sales using CALCULATE to sum sales only for the "Electronics" category.

```
DAX
CopyEdit
Electronics Sales = CALCULATE(
    SUM(Sales[Quantity] * Sales[UnitPrice]),
    Sales[Category] = "Electronics"
)
```

---

8. Use `ALL(Sales[Category])` in a measure to show total sales ignoring category filters.

```
DAX
CopyEdit
Total Sales All Categories = CALCULATE(
    SUM(Sales[Quantity] * Sales[UnitPrice]),
```

```
    ALL(Sales[Category])
)
```

9. Fix this error: A calculated column in Sales uses `RELATED(Customers[Region])` but returns blanks.

Cause: No relationship exists between `Sales` and `Customers`.

Fix: Create a relationship via `CustomerID`.

10. Why does CALCULATE override existing filters?

Because CALCULATE creates **new filter context**, replacing or adding to what's already applied.

11. Write a measure that returns average unit price of products

```
DAX
CopyEdit
Avg Unit Price = AVERAGE(Sales[UnitPrice])
```

12. Use VAR to store a temporary table of high-quantity sales (Quantity > 2), then count rows.

```
DAX
CopyEdit
High Qty Count =
VAR HighSales = FILTER(Sales, Sales[Quantity] > 2)
RETURN COUNTROWS(HighSales)
```

13. Write a measure % of Category Sales that shows each sale's contribution to its category total.

```
DAX
CopyEdit
% of Category Sales =
DIVIDE(
    Sales[Quantity] * Sales[UnitPrice],
    CALCULATE(SUM(Sales[Quantity] * Sales[UnitPrice]), ALLEXCEPT(Sales, S
ales[Category]))
)
```

---

14. Simulate a "remove filters" button using ALL in a measure.

```
DAX
CopyEdit
Sales No Filter = CALCULATE(
    SUM(Sales[Quantity] * Sales[UnitPrice]),
    ALL(Sales)
)
```

---

15. Troubleshoot: A CALCULATE measure ignores a slicer. What's the likely cause?

`ALL()` or similar function is used inside the measure, which **removes filters**, including slicers.