Power BI Measures – Complete & Easy Notes

1. What is a Measure in Power BI?

A Measure in Power BI is a DAX formula used to perform calculations such as SUM, AVERAGE, COUNT, MIN, MAX, etc. Measures are calculated at report time and change dynamically based on filters, slicers, and visuals.

Key Characteristics of Measures

1 Measures do NOT create new columns in tables.
2 They return a single aggregated value.
3 They are evaluated dynamically based on filters.
4 Mainly used in Cards, Charts, Tables, and KPIs.

2. Why Do We Use Measures?

Measures are used to analyze data and generate insights such as total sales, average revenue, number of orders, profit margins, and performance metrics in dashboards and reports.

3. Important Measure Formulas (DAX)

1 **Total Sales**: SUM(Sales[SalesAmount])
2 **Total Quantity**: SUM(Sales[Quantity])
3 **Average Sales**: AVERAGE(Sales[SalesAmount])
4 **Number of Orders**: COUNT(Sales[OrderID])
5 **Distinct Customers**: DISTINCTCOUNT(Sales[CustomerID])
6 **Maximum Sale**: MAX(Sales[SalesAmount])
7 **Minimum Sale**: MIN(Sales[SalesAmount])
8 **Total Sales (Qty × Price)**: SUMX(Sales, Sales[Quantity] * Sales[Price])

4. SUM vs SUMX (Very Important)

SUM() works only on a single column.
Example: SUM(Sales[Quantity])

SUMX() is used when calculation involves expressions or multiple columns.
Example: SUMX(Sales, Sales[Quantity] * Sales[Price])

5. Measure vs Calculated Column

Calculated Columns work row-by-row and are created during data load, whereas Measures calculate aggregated results at report time and respond to filters dynamically.

6. Easy Rules to Remember

1 If you need calculation for each row → Use Calculated Column.
2 If you need totals, averages, or summaries → Use Measure.

3   Dashboards and KPIs mostly use Measures.

Conclusion

Measures are the backbone of Power BI reporting. They help transform raw data into meaningful insights and are essential for building dynamic and interactive dashboards.