✅ 1. What does DAX stand for?

DAX = **Data Analysis Expressions**
It is a formula language used in Power BI, Power Pivot, and SSAS to create **calculations, measures, and calculated columns**.

✅ 2. Write a DAX formula to sum the Sales column.

DAX
КопироватьРедактировать
Total Sales = SUM(Sales[Sales])

✅ 3. Difference between a calculated column and a measure

Calculated Column	Measure
Evaluated **row by row** in the table	Evaluated in the **filter context** of visuals
Stored in the data model, increases size	Calculated on the fly, optimized
Used for row-level logic, relationships, groupings	Used for aggregations, KPIs, dynamic results

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✅ 4. Use DIVIDE function to calculate Profit Margin (Profit/Sales).

DAX
КопироватьРедактировать
Profit Margin = DIVIDE(Sales[Profit], Sales[Sales])

✔ **DIVIDE()** handles division by zero gracefully.

✅ 5. What does COUNTROWS() do in DAX?

Returns the **number of rows in a table**.

Example:

DAX
КопироватьРедактировать
Order Count = COUNTROWS(Sales)

✅ 6. Create a measure: Total Profit subtracting total cost from total sales

DAX
КопироватьРедактировать

```
Total Profit = SUM(Sales[Sales]) - SUM(Sales[Cost])
```

✅ 7. Measure to calculate Average Sales per Product

Assuming each row is a sale:

```
DAX
КопироватьРедактировать
Avg Sales per Product =
DIVIDE(
   SUM(Sales[Sales]),
   DISTINCTCOUNT(Sales[ProductID])
)
```

✅ 8. Use IF() to tag products as "High Profit" if Profit > 1000

Calculated Column Example:

```
DAX
КопироватьРедактировать
Profit Tag = IF(Sales[Profit] > 1000, "High Profit", "Low Profit")
```

✅ 9. What is a circular dependency error in a calculated column?

Occurs when a column's calculation **references itself directly or indirectly**, creating an infinite loop.

✔ Example:
Column A depends on Column B, but Column B also depends on Column A.

✅ 10. Explain row context vs. filter context.

Row Context	Filter Context
Evaluating each **individual row** (calculated columns, iterators like SUMX)	Filters applied to a calculation via visuals, slicers, or CALCULATE
Example: [Sales] * [Quantity] per row	Example: CALCULATE(SUM(Sales[Sales]), Year = 2024)

✅ 11. Write a measure to calculate YTD Sales using TOTALYTD()

```
DAX
КопироватьРедактировать
YTD Sales = TOTALYTD(
   SUM(Sales[Sales]),
   Dates[Date]
```

```
)
```

✔ Requires a **Dates table marked as Date Table**.

✅ 12. Create a dynamic measure that switches between Sales, Profit, and Margin

Using **SELECTEDVALUE with SWITCH:**

```
DAX
КопироватьРедактировать
Dynamic Measure =
SWITCH(
    SELECTEDVALUE(MeasureSelector[Measure]),
    "Sales", [Total Sales],
    "Profit", [Total Profit],
    "Margin", [Profit Margin]
)
```

✔ Requires a disconnected **MeasureSelector table** with values "Sales", "Profit", "Margin".

✅ 13. Optimize a slow DAX measure using variables (VAR)

Example:

```
DAX
КопироватьРедактировать
Optimized Measure =
VAR TotalSales = SUM(Sales[Sales])
VAR TotalCost = SUM(Sales[Cost])
RETURN
TotalSales - TotalCost
```

✔ Using **VAR** calculates once and reuses the value, improving performance.

✅ 14. Use CALCULATE() to override a filter

Example: Calculate sales ignoring product filters.

```
DAX
КопироватьРедактировать
All Product Sales =
CALCULATE(
    SUM(Sales[Sales]),
    ALL(Products)
)
```

✅ 15. Write a measure that returns the highest sales amount

DAX
КопироватьРедактировать
Max Sales = MAX(Sales[Sales])

Or for max sales across all data:

DAX
КопироватьРедактировать
Max Sales All = CALCULATE(
    MAX(Sales[Sales]),
    ALL(Sales)
)