

✓ 1. What does DAX stand for?

Answer: DAX stands for **Data Analysis Expressions**.

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

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Total Sales = SUM(DAX_Practice_Data[Sales])

✓ 3. What is the difference between a calculated column and a measure?

- **Calculated Column:** Row-by-row calculations stored in the data model.
 - **Measure:** Calculations evaluated based on context, not stored in the table.
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✓ 4. Use the DIVIDE function to calculate Profit Margin (Profit/Sales).

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Profit Margin = DIVIDE(DAX_Practice_Data[Sales] - DAX_Practice_Data[Cost],
DAX_Practice_Data[Sales])

✓ 5. What does COUNTROWS() do in DAX?

Answer: It counts the number of rows in a table.

✓ 6. Create a measure: Total Profit (Sales - Cost)

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

✅ **7. Write a measure to calculate Average Sales per Product**

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Average Sales per Product = AVERAGE(DAX_Practice_Data[Sales])

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

As a **calculated column**:

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Profit Tag = IF(DAX_Practice_Data[Sales] - DAX_Practice_Data[Cost] > 1000, "High Profit", "Low Profit")

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

Answer: It occurs when a column depends on itself either directly or indirectly, creating an infinite loop.

✅ **10. Explain row context vs. filter context**

- **Row context:** Operates on each row individually (used in calculated columns).
 - **Filter context:** Created by visuals, slicers, or CALCULATE(), determines what data is included in a measure.
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✅ **11. Write a measure to calculate YTD Sales using TOTALYTD()**

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YTD Sales = TOTALYTD(SUM(DAX_Practice_Data[Sales]), DAX_Practice_Data[Date])

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

(Requires disconnected table named Metric_Selector with values: Sales, Profit, Margin)

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Selected Metric =

```
SWITCH(
    SELECTEDVALUE(Metric_Selector[Metric]),
    "Sales", SUM(DAX_Practice_Data[Sales]),
    "Profit", SUM(DAX_Practice_Data[Sales]) - SUM(DAX_Practice_Data[Cost]),
    "Margin", DIVIDE(SUM(DAX_Practice_Data[Sales]) - SUM(DAX_Practice_Data[Cost]),
SUM(DAX_Practice_Data[Sales]))
)
```

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

Slow version:

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

Optimized version:

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Total Profit Optimized =

VAR SalesTotal = SUM(DAX_Practice_Data[Sales])

VAR CostTotal = SUM(DAX_Practice_Data[Cost])

RETURN SalesTotal - CostTotal

✅ **14. Use CALCULATE() to override a filter**

Example: Calculate Sales ignoring filter on ProductID

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Sales All Products = CALCULATE(SUM(DAX_Practice_Data[Sales]),
ALL(DAX_Practice_Data[ProductID]))

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

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Max Sales = MAX(DAX_Practice_Data[Sales])