1. What does DAX stand for?

DAX = *Data Analysis Expressions*
It is the formula language used in Power BI, Power Pivot, and SSAS for creating calculated columns, measures, and queries.

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2. DAX formula to sum the Sales column

```
dax
CopyEdit
Total Sales = SUM(Sales[Sales])
```

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3. Difference: Calculated Column vs. Measure

Calculated Column	Measure
Computed row-by-row	Computed based on filter context
Stored in data model	Calculated on the fly
Can be used in rows/columns	Used in visual aggregations

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4. Profit Margin using DIVIDE

```
dax
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Profit Margin = DIVIDE(Sales[Profit], Sales[Sales])
```

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5. What does COUNTROWS() do?

Returns the number of rows in a table.

```
dax
CopyEdit
Total Orders = COUNTROWS(Sales)
```

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6. Total Profit Measure (Sales - Cost)

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

Assumes there's a `Cost` column.

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7. Average Sales per Product

```
dax
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Avg Sales per Product = AVERAGEX(VALUES(Sales[Product]), SUM(Sales[Sales]))
```

🔹 8. Tag products as "High Profit"

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

This is for a calculated column.

🔹 9. Circular Dependency Error

Occurs when a calculated column depends on itself directly or indirectly — creating a loop in logic.

🔹 10. Row Context vs. Filter Context

- **Row Context**: Automatically applied when evaluating each row (e.g., in calculated columns).
- **Filter Context**: Comes from slicers, visuals, or CALCULATE, affecting what data is included in the calculation.

🔹 11. YTD Sales with TOTALYTD()

```
dax
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YTD Sales = TOTALYTD(SUM(Sales[Sales]), Sales[Date])
```

🔹 12. Dynamic Measure Switch (Sales, Profit, Margin)

Assumes you have a disconnected table `MetricsTable[MetricName]` with values like "Sales", "Profit", "Margin":

```
dax
CopyEdit
Dynamic Measure =
SWITCH(
    SELECTEDVALUE(MetricsTable[MetricName]),
    "Sales", SUM(Sales[Sales]),
    "Profit", SUM(Sales[Profit]),
    "Margin", DIVIDE(SUM(Sales[Profit]), SUM(Sales[Sales]))
)
```

🔹 13. Optimize a slow DAX measure using VAR

```
dax
CopyEdit
Optimized Margin =
VAR TotalSales = SUM(Sales[Sales])
VAR TotalProfit = SUM(Sales[Profit])
RETURN DIVIDE(TotalProfit, TotalSales)
```

🔹 14. Override a filter with CALCULATE()

```
dax
CopyEdit
All Region Sales = CALCULATE(SUM(Sales[Sales]), ALL(Sales[Region]))
```

🔹 15. Highest Sales Amount

```
dax
CopyEdit
Max Sales = MAX(Sales[Sales])
```