1. What does DAX stand for?

DAX stands for Data Analysis Expressions. It is a formula language used in Power BI, Excel Power Pivot, and Analysis Services to create custom calculations for data modeling and reporting.

2. Write a DAX formula to sum the Sales column

To calculate the total sales, create a measure with this formula:

Total Sales = SUM(Dax_practice_data[Sales])

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

A calculated column adds a new column to the table and calculates a value for each row. It works like Excel formulas for every row of data. For example, you can calculate Profit = Sales - Cost for every row.

A measure does not create a column but gives a result based on filters or visuals. It is used in cards, charts, and summaries. For example, Total Sales = SUM(Sales) shows the total sales when used in a visual.

Main difference:

- Calculated column is row-based.
- Measure is context-based and used in visuals.

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

If Profit is already a column:

Profit Margin = DIVIDE(SUM(DAX_Practice_Data[Sales]), SUM(DAX_Practice_Data[Sales]))

If Profit = Sales – Cost:

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

This avoids errors when dividing by zero.

5. What does "drill-down" mean in a visual?

Drill-down means to explore data step by step from a general level to more detailed information.
For example, if a chart shows Sales by Region, you can click on one Region to see Sales by Product.
Then, you can drill down again to see Sales by Month.

It helps you understand your data better by going from summary to details.

Example path:
Region → Product → Month

To use it in Power BI, you can click on the drill-down arrow on top of the chart and interact with visuals.

5. What does COUNTROWS() do in DAX?

   COUNTROWS() is a DAX function that counts the number of rows in a table.

   For example:

   Total Orders = COUNTROWS(Sales)

   This formula returns how many rows (orders) exist in the Sales table. It is useful when you want to count total transactions or filtered records in a visual.

6. Create a measure: Total Profit that subtracts total cost from total sales

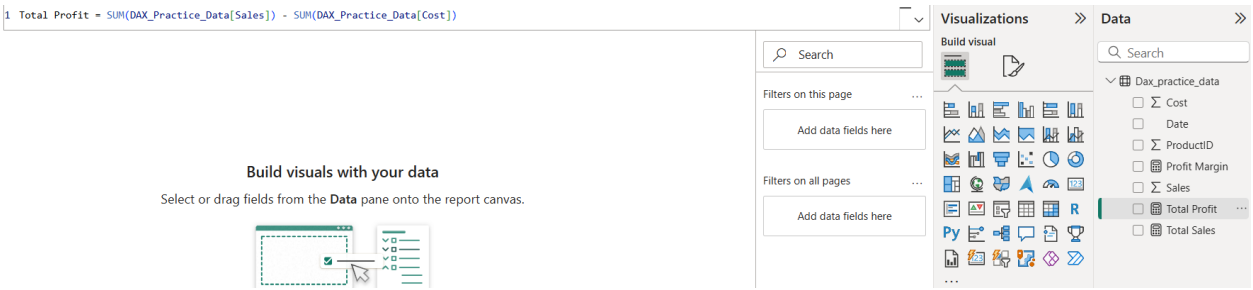
   To create a measure for Total Profit:

   1. Go to the Modeling tab.
   2. Click New Measure.
   3. Type the formula:

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

   4. Press Enter.

      This measure calculates the total profit by subtracting total cost from total sales.



7. **Write a measure to calculate Average Sales per Product**
   - Go to the **Modeling** tab
   - Click **New Measure**
   - Enter this formula:

Avg Sales per Product =
AVERAGEX(VALUES(DAX_Practice_Data[ProductID]),
DAX_Practice_Data[Sales])

This measure calculates the average Sales value for each unique Product.

8.

Count of ProductID	Sum of Sales	Sum of Cost	Profit tag
1	6000	$4,000	High Profit
2	5000	$3,500	Low Profit
3	**11000**	**$7,500**	

This table shows products with their profit amount and category.
If the Profit is more than 1000, the Profit Category is marked as "High Profit".
If the Profit is 1000 or less, it is marked as "Low Profit".
This helps to quickly understand which products bring high profit and which ones are less profitable.

9. Circular dependency error happens when a calculated column depends on itself — directly or through another column.
   For example, if column A uses column B, and column B also uses column A, then they both are waiting for each other to calculate.
   Power BI doesn't allow this and shows a circular dependency error.
   To fix it, we need to change the formula and remove the loop.
10. Row context means the formula looks at one row at a time. It happens when we create a calculated column.
    For example:
    Total = Price * Quantity → This works for every row in the table.

Filter context means filters are applied before the calculation.
It comes from visuals, slicers, or CALCULATE().
For example:
SUM(Sales[Amount]) → If the visual shows only Region = "West", then only those rows are summed.

Simple difference:

- Row context = one row at a time
- Filter context = filtered data used in calculation

11. TD (Year-To-Date) means the total from the start of the year up to the current date.

In Power BI, we can calculate YTD Sales using the TOTALYTD() function.
It automatically adds up values from the beginning of the year to the selected date in the visual.

Example Measure:

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

This measure is useful for dashboards and reports where we want to see sales performance progressing through the year.