1. What does DAX stand for? Data analysis expressions .A formula language used in PowerBI, Excel...
2. Write a DAX formula to sum the Sales column.

   TotalSales=SUM(Data_Sales[Sales])
3. What is the difference between a calculated column and a measure?

   Calculated column- stored in a table as a new column, can be used in filters and in slicers, Calculated row by row. Measure- calculated based on filters context, not stored only calculated when needed, used in visulas , cards, charts.
4. Use the DIVIDE function to calculate Profit Margin (Profit/Sales).

   ProfitMargin = DIVIDE(

   SUM(DAX_Practice_Data[Sales]) - SUM(DAX_Practice_Data[Cost]),

   SUM(DAX_Practice_Data[Sales]))
5. What does COUNTROWS() do in DAX? It counts number of rows in a table.
6. Create a measure: Total Profit that subtracts total cost from total sales

   TotalProfit = SUM(DAX_Practice_Data[Sales]) - SUM(DAX_Practice_Data[Cost])
7. Write a measure to calculate Average Sales per Product.
   AvgSalesPerProduct = AVERAGE(DAX_Practice_Data[Sales])
8. Use IF() to tag products as "High Profit" if Profit > 1000.

   ProfitTag = IF(DAX_Practice_Data[Profit] > 1000, "High Profit", "Normal")
9. What is a circular dependency error in a calculated column? It occurs when a column refers directly or indirectly to itself in its formula, creating an infinite loop that DAX cannot resolve. [Profit] = [Profit] + 10
10. Explain row context vs. filter context. Row context exists when power bi evaluates expressions row by row like in calculated column. Filter context happens when data is filtered by visulas, slicers or Calculate used in measure.
11. Write a measure to calculate YTD Sales using TOTALYTD().

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

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

```
MetricTable = DATATABLE(  "Metric", STRING,
   {
{"Sales"},
{"Profit"},
{"Margin"} }
 )
 SelectedMetric =
 SWITCH(
   SELECTEDVALUE(MetricTable[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).

```
 ProfitMargin =
VAR TotalSales = SUM(DAX_Practice_Data[Sales])
 VAR TotalCost = SUM(DAX_Practice_Data[Cost])
 RETURN DIVIDE(TotalSales - TotalCost, TotalSales)
```

14. Use CALCULATE() to override a filter

```
Sales_All_Dates =  CALCULATE(
   SUM(DAX_Practice_Data[Sales]),
   REMOVEFILTERS(DAX_Practice_Data[Date])
 )
```

15Write a measure that returns the highest sales amount

```
MaxSales = MAX(DAX_Practice_Data[Sales])
```