**Problem 1: Total Sales by Region**

**Question**: Calculate the total sales for each region.

**Solution 1:**

Total Sales by Region =

SUMMARIZE(

Orders,

Orders[Region],

"Total Sales", SUM(Orders[Sales])

)

**Problem 2: Average Discount by Category**

**Question**: Calculate the average discount applied for each product category.

**Solution 2:**

Average Discount by Category =

SUMMARIZE(

Orders,

Orders[Category],

"Average Discount", AVERAGE(Orders[Discount])

)

**Problem 3: Total Profit by Sub-Category**

**Question**: Find the total profit for each sub-category.

**Solution 3:**

Total Profit by Sub-Category =

SUMMARIZE(

Orders,

Orders[Sub-Category],

"Total Profit", SUM(Orders[Profit])

)

**Problem 4: Count of Products Sold in a City**

**Question**: Count the number of distinct products sold in the city of "Los Angeles".

**Solution 4:**

Count of Products in LA =

CALCULATE(

DISTINCTCOUNT(Orders[Product ID]),

Orders[City] = "Los Angeles"

)

**Problem 5: Profit Margin for Each Product**

**Question**: Calculate the profit margin for each product. (Profit Margin = Profit / Sales)

**Solution 5:**

Profit Margin =

DIVIDE(SUM(Orders[Profit]), SUM(Orders[Sales]), 0)

**Problem 6: Sales Growth by Region**

**Question**: Calculate the sales growth percentage for each region compared to the previous month.

**Solution 6:**

Sales Growth by Region =

VAR CurrentMonthSales = SUM(Orders[Sales])

VAR PreviousMonthSales =

CALCULATE(

SUM(Orders[Sales]),

DATEADD(Orders[Date], -1, MONTH)

)

RETURN

IF(

PreviousMonthSales > 0,

(CurrentMonthSales - PreviousMonthSales) / PreviousMonthSales,

BLANK()

)

**Problem 7: Total Quantity Sold for Each City**

**Question**: Calculate the total quantity sold for each city.

**Solution 7:**

Total Quantity by City =

SUMMARIZE(

Orders,

Orders[City],

"Total Quantity", SUM(Orders[Quantity])

)

**Problem 8: Average Sales per Product**

**Question**: Find the average sales for each product.

**Solution 8:**

Average Sales per Product =

AVERAGEX(

VALUES(Orders[Product Name]),

SUM(Orders[Sales])

)

**Problem 9: Top 3 Products by Profit**

**Question**: Identify the top 3 products based on total profit.

**Solution 9:**

Top 3 Products by Profit =

TOPN(

3,

SUMMARIZE(Orders, Orders[Product Name], "Total Profit", SUM(Orders[Profit])),

[Total Profit],

DESC

)

**Problem 10: Sales per State**

**Question**: Calculate the total sales for each state.

**Solution 10:**

Total Sales by State =

SUMMARIZE(

Orders,

Orders[State],

"Total Sales", SUM(Orders[Sales])

)

These problems are tailored to the attributes of the **Orders** table and will help participants practice their skills effectively. Let me know if you need further modifications or additional problems!

**Problem 11: Total Sales for Each Product in a Specific Region**

**Question**: Calculate the total sales for each product in the "North" region.

**Solution 11:**

Total Sales by Product in North =

CALCULATE(

SUM(Orders[Sales]),

Orders[Region] = "North"

)

**Problem 12: Count of Distinct Categories**

**Question**: Count the number of distinct product categories in the dataset.

**Solution 12:**

Distinct Category Count =

DISTINCTCOUNT(Orders[Category])

**Problem 13: Maximum Sales for a Product**

**Question**: Find the maximum sales amount recorded for any single product.

**Solution 13:**

Max Sales for a Product =

MAXX(

VALUES(Orders[Product Name]),

SUM(Orders[Sales])

)

**Problem 14: Running Total of Sales**

**Question**: Calculate the running total of sales for the entire dataset.

**Solution 14:**

Running Total Sales =

CALCULATE(

SUM(Orders[Sales]),

FILTER(

ALL(Orders[Date]),

Orders[Date] <= MAX(Orders[Date])

)

)

**Problem 15: Total Discounts Given by City**

**Question**: Calculate the total discounts given for each city.

**Solution 15:**

Total Discounts by City =

SUMMARIZE(

Orders,

Orders[City],

"Total Discounts", SUM(Orders[Discount])

)

**Problem 16: Average Quantity Sold per Order**

**Question**: Calculate the average quantity sold per order.

**Solution 16:**

Average Quantity per Order =

AVERAGEX(

VALUES(Orders[Product ID]),

SUM(Orders[Quantity])

)

**Problem 17: Total Profit for Each Category**

**Question**: Calculate the total profit for each product category.

**Solution 17:**

Total Profit by Category =

SUMMARIZE(

Orders,

Orders[Category],

"Total Profit", SUM(Orders[Profit])

)

**Problem 18: Count of Orders with Zero Profit**

**Question**: Count the number of orders that have a profit of zero.

**Solution 18:**

Count of Zero Profit Orders =

COUNTROWS(

FILTER(Orders, Orders[Profit] = 0)

)

**Problem 19: Sales per Product Name**

**Question**: Calculate the total sales for each product name.

**Solution 19:**

Total Sales by Product Name =

SUMMARIZE(

Orders,

Orders[Product Name],

"Total Sales", SUM(Orders[Sales])

)

**Problem 20: Average Profit per Sale**

**Question**: Calculate the average profit per sale across all orders.

**Solution 20:**

Average Profit per Sale =

AVERAGEX(

Orders,

Orders[Profit]

)