

DAX (Data Analysis Expression)

Q- How would you calculate the total sales amount when the price is stored in a related table, and you only have quantity in your sales table? Can you provide a DAX formula using a relationship between the tables and explain when to use SUMX over SUM?

Total sales = **SUMX**(sales, sales[quantity] * **RELATED**(products[price]))

- SUM works only on one column.
- SUMX lets you do row-level calculations (e.g., quantity * price).

Q- If a client needs to view sales figures for the current month dynamically based on the selected date in the report, how would you write the DAX and ensure it's responsive to slicers and filters?

Current Month Sales = CALCULATE([Total sales], **DATESMTD**(DateTable[Date]))

Example - User selects 18 May 2025 in a slicer. Sales from 1 May 2025 to 18 May 2025

Q- You're asked to compare this month's sales with last month's performance?

Previous Month Sales = CALCULATE([Total sales],
DATESMTD(**DATEADD**(DateTable[Date], -1,MONTH)))

// Works best for visuals filtered by day or partial month

Example - User selects 18 May 2025 in a slicer. Sales from 1 April 2025 to 18 April 2025

Previous Month Full Sales = CALCULATE([Total sales],
PREVIOUSMONTH(DateTable[Date]))

// full previous month regardless of selection

Example - User selects 18 May 2025 in a slicer. Sales from April 2025

Q- In a monthly sales report, how would you show the percentage growth or decline compared to the previous month? Explain the formula and how you would prevent errors due to division by zero.

MoM % =

$\text{DIVIDE}([\text{Current Month Sales}] - [\text{Previous Month Sales}], [\text{Previous Month Sales}])$

Example - Current = \$100,000, Previous = \$80,000
 $(100,000 - 80,000) / 80,000 = 25\%$ growth

Q- How would you calculate the Year-To-Date (YTD) sales figures in Power BI

Current Sales YTD = $\text{CALCULATE}([\text{Total sales}], \text{DATESYTD}(\text{DateTable}[\text{Date}]))$

Example - User selects 18 May 2025. Sales from 1 Jan 2025 to 18 May 2025

Q- You need to show YTD sales from the previous year for YoY comparison. How would you do that?

Previous Sales YTD = $\text{CALCULATE}([\text{Total sales}], \text{DATESYTD}(\text{DATEADD}(\text{DateTable}[\text{Date}], -1, \text{YEAR})))$

Example – Selection = 1 Jan to 18 May 2025. Sales from 1 Jan to 18 May 2024

Q- How would you calculate the percentage change in sales comparing current YTD with the same period last year? How can this help in executive-level dashboards?

MoM % YTD =

$\text{DIVIDE}([\text{Current Sales YTD}] - [\text{Previous Sales YTD}], [\text{Previous Sales YTD}])$

Example – 2025 YTD = \$150,000, 2024 YTD = \$120,000

$(150,000 - 120,000) / 120,000 = 25\%$

Q- You want to analyze sales trends over a moving 30-day window. How would you write the DAX for this and what use cases benefit from a rolling average over simple daily values?

Average Rolling 30 Days =

AVERAGEX(**DATESINPERIOD**(DateTable[Date],MAX(DateTable[Date]), -30, DAY), [Total sales])

Example – Selected date = 18 May 2025, Average of daily sales from 18 April to 18 May 2025

Q- How to show average daily sales in a month?

Monthly Average Sales = **AVERAGEX**(**VALUES**(DateTable[Date]), [Total sales])

Example – In April 2025, daily sales recorded on 20 days. Total = \$60,000.

$60,000 / 20 = \$3,000$ average daily sales

Q- If a user selects a specific date, how would you show total sales for the 30 days ending on that date? How would the results change if the user selected a range instead?

Rolling 30-Day Sales = **CALCULATE**([Total sales], **DATESINPERIOD**(DateTable[Date], **LASTDATE**(DateTable[Date]), -30, DAY))

Example –

Select 1–31 May → returns 1–31 May

Select 10–25 May → returns 25 Apr – 25 May

Q- You're asked to identify which month had the highest sales. How would you rank months based on total sales, and how do you ensure months with the same sales are handled correctly?

Rank Month by Sales = **RANKX**(**ALL**(DateTable[year monthno]), **CALCULATE**([Total sales]), , **DESC**, **Dense**)

Example – Top sales months:

- Jan = \$100K → Rank 1
- Mar = \$100K → Rank 1
- Feb = \$90K → Rank 2

Dense rank applied, no skipped ranks

Q- How would you filter a report to display only the top 3 performing months based on sales? What DAX technique would you use to hide non-top months?

Top 3 Months by Sales = **IF**([Rank Month by Sales] <= 3, [Rank Month by Sales], **BLANK**())

Q- To compare current sales with the same month last year, what's the best approach?

Sale LY same month(**DATEADD**) = **CALCULATE**([Total sales], **DATEADD**(DateTable[Date], -1, **YEAR**))

Example - Select 1–31 March 2025 → shifts to 1–31 March 2024.

Sales for March 2024

Q- How would you calculate Month-to-Date and Year-to-Date sales, and filter it for specific product and region simultaneously?

Total sales MTD = **TOTALMTD**([Total sales], DateTable[Date])

Total sales YTD = **TOTALYTD**([Total sales], DateTable[Date])

//TOTALMTD is a quick measure that returns the total directly. DATESMTD is more flexible inside CALCULATE when we need to apply more filters or logic.

Total sales YTD (ADVANCED) =

```
CALCULATE(  
    [Total sales],  
    DATESYTD(DateTable[Date]),  
    products[product] = "Arizona - Green Tea",  
    location[state] = "Florida"  
)
```

Total sales YTD LY (advance DATESYTD + DATESADD) = CALCULATE([Total sales], **DATESYTD**(**DATEADD**(DateTable[Date],-1,YEAR)), products[product] = "Arizona - Green Tea", location[state] = "Florida")

Q- There are multiple ways to calculate YoY sales in DAX—how do you choose among DATEADD, SAMEPERIODLASTYEAR, PREVIOUSYEAR, and PARALLELPERIOD?

YoY sales = CALCULATE([Total sales], **SAMEPERIODLASTYEAR**(DateTable[Date]))

YoY Sales (DATEADD) = CALCULATE([Total Sales], **DATEADD**(DateTable[Date], -1, YEAR))

YoY Sales (PARALLELPERIOD) = CALCULATE([Total Sales], **PARALLELPERIOD**(DateTable[Date], -1, YEAR))

YoY Sales (PREVIOUSYEAR) = CALCULATE([Total Sales], **PREVIOUSYEAR**(DateTable[Date]))

YoY sales % = DIVIDE((([Total sales] - [YoY sales]), [YoY sales])

Input Examples:

Date				
Range	SAMEPERIODLASTYEAR DATEADD PARALLELPERIOD PREVIOUSYEAR			
Selected				
18 May 2025	18 May 2024	18 May 2024	May 2024	Jan–Dec 2024
1–20 Apr 2025	1–20 Apr 2024	1–20 Apr 2024	Apr 2024	Jan–Dec 2024
Jan–Dec 2025	Jan–Dec 2024	Jan–Dec 2024	Jan–Dec 2024	Jan–Dec 2024

Real-World Use Case Summary

Requirement	Use This
Always return full previous month, regardless of selected date	PREVIOUSMONTH()
Always return same full quarter last year, even if partial quarter selected	PARALLELPERIOD()
Preserve custom date ranges exactly (e.g., 1–10 Apr)	DATEADD(), SAMEPERIODLASTYEAR()
Cumulative totals up to a selected date	DATESYTD(), DATESMTD(), DATESQTD()

What Works With What?

They rely on the correct granularity of the visual or slicer to behave as expected.

Function	Needs actual Date column	Dynamic across slicers?	Summary-level friendly?
DATESYTD()	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Function	Needs actual Date column	Dynamic across slicers?	Summary-level friendly?
TOTALYTD()	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
PARALLELPERIOD()	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
PREVIOUSMONTH()	<input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes
SAMEPERIODLASTYEAR()	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes, but only with full date continuity	<input checked="" type="checkbox"/> No
DATEADD()	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> Yes	<input checked="" type="checkbox"/> No