Power BI Questions & Answers

1. **Implicit vs Explicit Measures?**

   Implicit Measures: When you drag a numeric column (like Sales) to a visual, Power BI automatically creates SUM, COUNT, or AVERAGE calculation behind the scenes without showing the formula.

   Explicit Measures: You manually create them via Modeling → New Measure and write DAX code like: Total Sales = SUM(SalesTable[SalesAmount]).

   Wrong Answer: Both are same...

   Right Answer: Implicit = Power BI auto-calculates when dragging fields. Explicit = Custom DAX measures I create manually for control and reusability across reports.
   Example: Drag Sales column → Power BI auto SUMs = Implicit. Create Total Revenue = SUM(Sales[Amount]) = Explicit.

2. **Import vs DirectQuery vs Live Connection?**

   Import Mode: Downloads complete dataset into Power BI (like Excel). Fast visuals, 1GB limit, needs scheduled refresh.

   DirectQuery Mode: No data stored in Power BI. Every visual click sends live query to database. Real-time data, slower performance.

   Live Connection: Connects to existing Power BI dataset or SSAS cube (read-only, someone else manages refresh).

   Use Case: Import = Dashboard demos. DirectQuery = Live stock prices. Live = Enterprise shared datasets.

   Interview Answer: Import for speed (cached data), DirectQuery for real-time, Live for shared enterprise models.

3. **Calculated Column vs Measure?**

   Calculated Column: Creates new column in your data table, calculated row-by-row when data loads, stored permanently in model. Full Name = [FirstName] & & [LastName] (stored in model, row-by-row)

   Measure: Dynamic calculation that changes based on visual filters, calculated on-the-fly, not stored. Total Sales = SUM(Sales[Amount]) (calculated fresh each visual)

   Key Difference: Columns = Static values (like Excel formulas). Measures = Smart aggregations (SUM, AVG, COUNT).

4. **Power Query vs Power Pivot?**

   Power Query (Get Data → Transform): ETL tool for data preparation. Cleans messy data before analysis.

   What it does: Remove duplicates, split columns, merge tables, change data types, filter rows.

   Where: Home → Transform Data.

   Power Pivot: Data modeling engine inside Power BI Desktop. Creates relationships between tables + DAX measures.

   What it does: Links Sales → Customers → Products tables, creates Total Revenue = SUM(Sales[Amount]).

   Where: Modeling tab.

   Workflow: Raw CSV → Power Query (clean) → Power Pivot (model) → Visuals.

5. **What is DAX?**
   DAX = Data Analysis Expressions. Power BI's formula language (like Excel formulas but 100x more powerful).

Used for:
Measures: Total Sales = SUM(Sales[Amount])

Calculated Columns: Profit Margin = Sales[Revenue]/Sales[Cost]

Calculated Tables: Top Customers = TOPN(10, Customers, Customers[Sales], DESC)

Key Functions: SUM, AVERAGE, CALCULATE, DIVIDE, RELATED, FILTER.
Interview Answer: DAX creates dynamic calculations that change based on visual filters, unlike static Excel formulas.

6. **What is Star Schema?**

Picture: One giant Fact table (Sales, Dates, Amounts) in center.

Dimension tables (Products, Customers, Dates) around it connected by keys.

Fact = Numbers, Dimensions = Descriptions.

7. **Slicer vs Filter?**

Slicer: Big interactive buttons users click (2026 Region slicer)

Filter: Hidden pane filtering data (same result, no user control)

Slicer = Dashboard VIP, Filter = Backroom work.

8. **Row-Level Security (RLS)?**

RLS = Row-Level Security. Filters data based on who's viewing the report.
[Region] = USERPRINCIPALNAME() → HR manager only sees HR region data.

Makes one report work for 1000 users!

9. **Bookmarks?**

Bookmarks = Saved visual states. Capture filters, zoom, hidden visuals, navigation.

Use:

Bookmark India Overview (Country=India filter)

Bookmark USA Detail (Country=USA + drill-down)

View → Bookmarks Pane → Click to jump between states.

Interview: Bookmarks create interactive storytelling without PowerPoint.

10. **Refresh Types?**

Manual Refresh: Click Refresh button (only in Power BI Desktop).

Scheduled Refresh: Power BI Service auto-refreshes dataset (up to 8x/day free tier).

Incremental Refresh: Premium feature. Only refreshes new/changed partitions (billions of rows).

Interview: Manual for dev, Scheduled for prod, Incremental for enterprise scale.

11. **CALCULATE() does what?**

What it does: Changes filter context temporarily for measures. Most important DAX function!

Sales YTD = CALCULATE(SUM(Sales[Amount]),
DATESYTD(Calendar[Date]))

Magic: Changes filter context temporarily.
CALCULATE = Filter time machine.

Interview Answer: CALCULATE modifies filter context. Without it, slicers break time intelligence functions.

12. SUM vs SUMX?

SUM: Simple column aggregation. Adds entire column.
SUM(Sales[Amount]) = Add entire column.

SUMX: Row-by-row calculation, then sums results.
SUMX(Products, Products[Price] * Products[Quantity]) = Row-by-row math → then sum.

SUM = Simple total, SUMX = Row calculator.

Interview: SUM = column total. SUMX = row calculations → total.

13. What-if Parameters?

What: Slider controls for scenario analysis. No code changes needed.

Setup: Modeling → New Parameter → Discount % (0-20%)

Dynamic what-if scenarios without code.

Use Case: Show What happens if discount increases from 5% to 15%?
Visual: Single slider changes entire dashboard instantly.

Interview: What-if parameters enable dynamic scenario analysis without DAX changes.

14.Gateway?

What: Secure bridge between on-premise data (SQL Server in office) and Power BI Service (cloud).
On-premise data → Power BI Service needs bridge. Gateway = secure tunnel. Your office data's internet connection to cloud.

Types:

Personal Gateway: 1 user, simple setup

Enterprise Gateway: Multiple users, clustering

Interview: Gateway connects on-premise databases to Power BI Service for scheduled refreshes.

15.Composite Models?

What: Mix different data sources in single report.

Customer table = Import (fast). Sales = DirectQuery (live). One report! Best of both worlds.

Interview: Composite models combine Import + DirectQuery tables for optimal performance.

16.Time Intelligence Functions?

Purpose: Compare current period vs past periods (YTD, last year, etc.).

Sales YTD = TOTALYTD(SUM(Sales[Amount]), Calendar[Date])
Last Year = CALCULATE(SUM(Sales[Date]),
SAMEPERIODLASTYEAR(Calendar[Date]))

Interview: Time intelligence compares current vs historical periods using date table.

17. MERGE vs APPEND?

MERGE: Two tables side-by-side (like Excel VLOOKUP)

APPEND: Stack tables top-bottom (like copy-paste rows)

18. Query Folding?

What: Power Query pushes transformations back to database instead of downloading all data first.

Power Query filter Year=2024 → pushed to database = fast! No folding = downloads all data first.

Database does heavy lifting.
Check: View → Query Settings → View Native Query (gray = folding works).

Interview: Query folding pushes Power Query steps to source database for performance.

19. Relationships Cardinality?

*1: (One-to-Many)**: One Customer → Many Orders (most common).

*:1 (Many-to-One): Many Orders → One Customer.

:* (Many-to-Many)**: Rare, needs bridge table.

20. Drill-through?

Matrix → right-click North Region → jumps to detailed North Region page.
Click to dive deeper.

Interview: Drill-through provides context-specific detail pages from summary visuals.

21. Inactive Relationships?

What: Multiple relationship paths between same tables. Only 1 active at a time.

Customer → OrderDate & Customer → ShipDate. Only one active.
CALCULATE(Sales, USERELATIONSHIP(Customer[ID], ShipDate[CustomerID])).

Multiple paths, pick one temporarily.

Interview: Inactive relationships need USERELATIONSHIP() to activate temporarily in DAX.

22. Variable in DAX?

What: Store intermediate calculations for performance + readability.

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

Calculate once, reuse multiple times

Interview: Variables improve DAX performance by avoiding repeated calculations.

23. Field Parameters?

What: Dynamic field switching in visuals with dropdowns. No duplicate charts.

Setup: Modeling → New Parameter → Fields → Select Sales, Profit, Orders.

One chart switches: Sales / Profit / Orders with dropdown. No duplicate visuals!

Dynamic field switching.

Interview: Field parameters create dynamic visuals that switch metrics without duplication.

24.Custom Visuals?

What: 3rd party charts from AppSource marketplace (Power BI's visual store).

AppSource → Gantt Chart, Bullet Chart, Word Cloud. Free + paid. Power BI's visual app store.

Interview: Custom visuals extend Power BI's 100+ native visuals via AppSource marketplace.

25.Semantic Model?

What: Power BI's 2025+ upgraded dataset architecture. Replaces traditional Import/DirectQuery.

Power BI's 2025+ upgraded dataset. Direct Lake (no Import/DirectQuery compromise) + AI visuals.

Future of Power BI data.

Interview: Semantic models unify Power BI's data architecture with AI capabilities and Direct Lake storage.