Microsoft DA-100 Questions & Answers

Analyzing Data with Microsoft Power BI

Version: 9.0

Topic 1, Prepare the Data

QUESTION NO: 1

Case Study

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Overview

Litware, Inc. is an online retailer that uses Microsoft Power BI dashboards and reports.

The company plans to leverage data from Microsoft SQL Server databases, Microsoft Excel files, text files, and several other data sources.

Litware uses Azure Active Directory (Azure AD) to authenticate users.

Existing Environment

Sales Data

Litware has online sales data that has the SQL schema shown in the following table.

Table name	Column name	Data type
Sales_Region	region_id	Integer
	name	Varchar
Region_Manager	region_id	Integer
	manager_id	Integer
Sales_Manager	sales_manager_id	Integer
	name	Varchar
	username	Varchar
Sales	sales_id	Integer
	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
Weekly_Returns	week_id	Integer
	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
	region_id	Integer

In the Date table, the date_id column has a format of yyyymmdd and the month column has a format of yyyymm.

The week column in the Date table and the week_id column in the Weekly_Returns table have a format of yyyyww.

The sales_id column in the Sales table represents a unique transaction.

The region_id column can be managed by only one sales manager.

Data Concerns

You are concerned with the quality and completeness of the sales data. You plan to verify the sales data for negative sales amounts.

Reporting Requirements

Litware identifies the following technical requirements:

- Executives require a visual that shows sales by region.
- Regional managers require a visual to analyze weekly sales and returns.
- Sales managers must be able to see the sales data of their respective region only.
- The sales managers require a visual to analyze sales performance versus sales targets.
- The sale department requires reports that contain the number of sales transactions.
- Users must be able to see the month in reports as shown in the following example: Feb 2020.
- The customer service department requires a visual that can be filtered by both sales month and ship month independently.

You need to create a calculated column to display the month based on the reporting requirements.

Which DAX expression should you use?

A.
FORMAT('Date'[date], "MMM YYYY")

B.
FORMAT('Date' [date], "M YY")

C.
FORMAT('Date'[date_id], "MMM") & "" & FORMAT('Date'[year], "#")

D.
FORMAT('Date' [date_id], "MMM YYYY")

Answer: A

Explanation:

Scenario: In the Date table, the date_id column has a format of yyyymmdd. Users must be able to see the month in reports as shown in the following example: Feb 2020.

Reference:

https://docs.microsoft.com/en-us/dax/format-function-dax

https://dax.guide/format/

QUESTION NO: 2

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	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
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- Users must be able to see the month in reports as shown in the following example: Feb 2020.
- The customer service department requires a visual that can be filtered by both sales month and ship month independently.

You need to review the data for which there are concerns before creating the data model.

What should you do in Power Query Editor?

A.
Transform the sales_amount column to replace negative values with 0.

B.
Select **Column distribution**.

C.
Select the sales_amount column and apply a number filter.

D.
Select **Column profile**, and then select the sales_amount column.

Answer: D

Explanation:

Scenario: Data Concerns

You are concerned with the quality and completeness of the sales data. You plan to verify the sales data for negative sales amounts.

The Column profile feature provides a more in-depth look at the data in a column. It contains a column statistics chart that displays Count, Error, Empty, Distinct, Unique, Empty String, Min, & Max of the selected column.

Reference:

https://docs.microsoft.com/en-us/power-query/data-profiling-tools

https://powerbidocs.com/2021/03/02/column-quality-column-distribution-column-profile/

QUESTION NO: 3

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Overview

Contoso, Ltd. is a manufacturing company that produces outdoor equipment. Contoso has quarterly board meetings for which financial analysts manually prepare Microsoft Excel reports, including profit and loss statements for each of the company's four business units, a company balance sheet, and net income projections for the next quarter.

Existing Environment

Data and Sources

Data for the reports comes from three sources. Detailed revenue, cost, and expense data comes from an Azure SQL database. Summary balance sheet data comes from Microsoft Dynamics 365 Business Central. The balance sheet data is not related to the profit and loss results, other than they both relate to dates.

Monthly revenue and expense projections for the next quarter come from a Microsoft SharePoint Online list. Quarterly projections relate to the profit and loss results by using the following shared dimensions: date, business unit, department, and product category.

Net Income Projection Data

Net income projection data is stored in a SharePoint Online list named Projections in the format shown in the following table.

MonthStartDate	Projection type	ProductCategory	Department	Projection
1-Apr-20	Revenue	Bikes	N/A	200,000
1-Apr-20	Revenue	Components	N/A	250,000
1-Apr-20	Revenue	Clothing	N/A	300,000
1-Apr-20	Revenue	Accessories	N/A	150,000
1-May-20	Revenue	Bikes	N/A	200,000
1-May-20	Revenue	Components	N/A	250,000
1-Apr-20	Expense	Bikes	Bike Manufacture	50,000
1-Apr-20	Expense	Bikes	Bike Sales	3,333

Revenue projections are set at the monthly level and summed to show projections for the quarter.

Balance Sheet Data

The balance sheet data is imported with final balances for each account per month in the format shown in the following table.

AccountCategory	Account	Month	Year	BalanceAmount
Current assets	Cash and cash equivalents	3	2020	20,289
Current assets	Inventories	3	2020	4,855
Long-term liabilities	Long-term debt	3	2020	50,207
Current assets	Cash and cash equivalents	2	2020	28,209
Current assets	Inventories	2	2020	5,845
Long-tern liabilities	Long-tern debt	2	2020	49,887
Current assets	Cash and cash equivalents	1	2020	25,567
Current assets	Inventories	1	2020	65,998
Long-term liabilities	Long-term debt	1	2020	46,124

There is always a row for each account for each month in the balance sheet data.

Dynamics 365 Business Central Data

Business Central contains a product catalog that shows how products roll up to product categories, which roll up to business units.

Revenue data is provided at the date and product level. Expense data is provided at the date and department level.

Business Issues

Historically, it has taken two analysts a week to prepare the reports for the quarterly board meetings. Also, there is usually at least one issue each quarter where a value in a report is wrong because of a bad cell reference in an Excel formula. On occasion, there are conflicting results in the reports because the products and departments that roll up to each business unit are not defined consistently.

Requirements

Planned Changes

Contoso plans to automate and standardize the quarterly reporting process by using Microsoft Power BI. The company wants to how long it takes to populate reports to less than two days. The company wants to create common logic for business units, products, and departments to be used across all reports, including, but not limited, to the quarterly reporting for the board.

Technical Requirements

Contoso wants the reports and datasets refreshed with minimal manual effort.

The company wants to provide a single package of reports to the board that contains custom navigation and links to supplementary information.

Maintenance, including manually updating data and access, must be minimized as much as possible.

Security Requirements

The reports must be made available to the board from powerbi.com. An Azure Active Directory group will be used to share information with the board.

The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

Name	Data type	Example
Date	Date	4-Apr-2020
Month	Integer	20,2004
Month Name	Text	February
Quarter	Integer	20,202
Year	Integer	2,020

The definitions and attributes of products, departments, and business units must be consistent across all reports.

The board must be able to get the following information from the quarterly reports:

- Revenue trends over time
- Ending balances for each account
- A comparison of expenses versus projections by quarter
- Changes in long-term liabilities from the previous quarter
- A comparison of quarterly revenue versus the same quarter during the prior year

What is the minimum number of Power BI datasets needed to support the reports?

A.
two imported datasets

B.
a single DirectQuery dataset

C.
two DirectQuery datasets

D.
a single imported dataset

Answer: A
Explanation:

Scenario: Data and Sources

Data for the reports comes from three sources. Detailed revenue, cost, and expense data comes from an Azure SQL database. Summary balance sheet data comes from Microsoft Dynamics 365 Business Central. The balance sheet data is not related to the profit and loss results, other than

they both relate to dates.

Monthly revenue and expense projections for the next quarter come from a Microsoft SharePoint Online list. Quarterly projections relate to the profit and loss results by using the following shared dimensions: date, business unit, department, and product category.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/service-datasets-understand

QUESTION NO: 4

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Overview. General Overview

Northwind Traders is a specialty food import company.

The company recently implemented Power BI to better understand its top customers, products, and suppliers.

Overview. Business Issues

The sales department relies on the IT department to generate reports in Microsoft SQL Server Reporting Services (SSRS). The IT department takes too long to generate the reports and often misunderstands the report requirements.

Existing Environment. Data Sources

Northwind Traders uses the data sources shown in the following table.

Name	Type	Data size
Source1	Azure SQL database	2 GB
Source2	Microsoft Excel spreadsheet	5 MB

Source2 is exported daily from a third-party system and stored in Microsoft SharePoint Online.

Existing Environment. Customer Worksheet

Source2 contains a single worksheet named Customer Details. The first 11 rows of the worksheet are shown in the following table.

CustomerID	CustomerCRMID	CompanyName	Address	City	Region	PostalCode	Country	Phone
1	ALFKI	Alfreds Futterkiste	Obere Str. 57	Berlin	DE	12209	Germany	030-0074321
2	ANATR	Ana Trujillo Emparedados y helados	Avda. de la Constitución 2222	México D.F.	MX	5021	Mexico	(5) 555-4729
3	ANTON	Antonio Moreno Taquería	Mataderos 2312	México D.F.	MX	5023	Mexico	(5) 555-3932
4	AROUT	Around the Horn	120 Hanover Sq.	London	UK	WA1 1DP	UK	(171) 555-7788
5	BERGS	Berglunds snabbköp	Berguvsvägen 8	Luleå	SWE	S-958 22	Sweden	0921-12 34 65
6	BLAUS	Blauer See Delikatessen	Forsterstr. 57	Mannheim	DE	68306	Germany	0621-08460
7	BLONP	Blondesddsi père et fils	24, place Kléber	Strasbourg	FRA	67000	France	88.60.15.31
8	BOLID	Bólido Comidas preparadas	C/ Araquil, 67	Madrid	SPN	28023	Spain	(91) 555 22 82
9	BONAP	Bon app'	12, rue des Bouchers	Marseille	FRA	13008	France	91.24.45.40
10	BOTTM	Bottom-Dollar Markets	23 Tsawassen Blvd.	Tsawassen	BC	T2F 8M4	Canada	(604) 555-4729

All the fields in Source2 are mandatory.

The Address column in Customer Details is the billing address, which can differ from the shipping address.

Existing Environment. Azure SQL Database

Source1 contains the following table:

Orders

Products

Suppliers

Categories

Order Details

Sales Employees

The Orders table contains the following columns.

Name	Is nullable	Data type	Example value	Key
OrderID	No	Int	10248	Primary key
CustomerID	Yes	NCHAR	VINET	**Not applicable**
OrderDate	Yes	Date	2021-01-04	**Not applicable**
RequiredDate	Yes	Date	2021-02-01	**Not applicable**
ShippedDate	Yes	Date	2021-01-16	**Not applicable**
Freight	Yes	Decimal	32.38	**Not applicable**
ShipName	Yes	NVARCHAR	Vins et alcools Chevalier	**Not applicable**
ShipAddress	Yes	NVARCHAR	59 rue de l'Abbaye	**Not applicable**
ShipCity	Yes	NVARCHAR	Reims	**Not applicable**
ShipRegion	Yes	NVARCHAR	FRA	**Not applicable**
ShipPostalCode	Yes	NVARCHAR	511000	**Not applicable**
ShipCountry	Yes	NVARCHAR	France	**Not applicable**

The Order Details table contains the following columns.

Name	Is nullable	Data type	Example value	Key
OrderID	No	Int	10248	Foreign key to Orders
ProductID	No	Int	11	Foreign key to Products
UnitPrice	No	Decimal	14	**Not applicable**
Quantity	No	Smallint	12	**Not applicable**
Discount	No	Decimal	0.15	**Not applicable**

The address in the Orders table is the shipping address, which can differ from the billing address.

The Products table contains the following columns.

Name	Is nullable	Data type	Example value	Key
ProductID	No	Int	11	Primary key
ProductName	No	NVARCHAR	Queso Cabrales	**Not applicable**
SupplierID	Yes	Int	5	Foreign key to Suppliers
CategoryID	Yes	Int	4	Foreign key to Categories
QuantityPerUnit	Yes	NVARCHAR	1 kg pkg.	**Not applicable**
Discontinued	No	Bit	0	**Not applicable**

The Categories table contains the following columns.

Name	Is nullable	Data type	Example value	Key
CategoryID	No	int	4	Primary key
CategoryName	No	nvarchar	Dairy Products	**Not applicable**
Description	Yes	nvarchar	Cheeses	**Not applicable**

The Suppliers table contains the following columns.

Name	Is nullable	Data type	Example value	Key
SupplierID	No	Int	5	Primary key
CompanyName	No	NVARCHAR	Cooperativa de Quesos 'Las Cabras'	**Not applicable**
Address	Yes	NVARCHAR	Calle del Rosal 4	**Not applicable**
City	Yes	NVARCHAR	Oviedo	**Not applicable**
Region	Yes	NVARCHAR	Asturias	**Not applicable**
PostalCode	Yes	NVARCHAR	33007	**Not applicable**
Country	Yes	NVARCHAR	Spain	**Not applicable**
Phone	Yes	NVARCHAR	(98) 598 76 54	**Not applicable**

The Sales Employees table contains the following columns.

Name	Is nullable	Data type	Example value	Key
EmployeeID	No	Int	1	Primary key
LastName	No	NVARCHAR	Davolio	**Not applicable**
FirstName	No	NVARCHAR	Nancy	**Not applicable**
Title	Yes	NVARCHAR	Sales Representative	**Not applicable**
HireDate	Yes	Date	2015-02-01	**Not applicable**
Region	Yes	NVARCHAR	WA	**Not applicable**
Country	Yes	NVARCHAR	USA	**Not applicable**
EmailAddress	No	NVARCHAR	ndavolio@northwindtraders.com	**Not applicable**

Each employee in the Sales Employees table is assigned to one sales region. Multiple employees can be assigned to each region.

Requirements. Report Requirements

Northwind Traders requires the following reports:

Top Products

Top Customers

On-Time Shipping

The Top Customers report will show the top 20 customers based on the highest sales amounts in a selected order month or quarter, product category, and sales region.

The Top Products report will show the top 20 products based on the highest sales amounts sold in a selected order month or quarter, sales region, and product category. The report must also show which suppliers provide the top products.

The On-Time Shipping report will show the following metrics for a selected shipping month or quarter:

The percentage of orders that were shipped late by country and shipping region

Customers that had multiple late shipments during the last quarter

Northwind Traders defines late orders as those shipped after the required shipping date.

The warehouse shipping department must be notified if the percentage of late orders within the current month exceeds 5%.

The reports must show historical data for the current calendar year and the last three calendar years.

Requirements. Technical Requirements

Northwind Traders identifies the following technical requirements:

A single dataset must support all three reports.

The reports must be stored in a single Power BI workspace.

Report data must be current as of 7 AM Pacific Time each day.

The reports must provide fast response times when users interact with a visualization.

The data model must minimize the size of the dataset as much as possible, while meeting the report requirements and the technical requirements.

Requirements. Security Requirements

Access to the reports must be granted to Azure Active Directory (Azure AD) security groups only. An Azure AD security group exists for each department.

The sales department must be able to perform the following tasks in Power BI:

- Create, edit, and delete content in the reports.
- Manage permissions for workspaces, datasets, and report.
- Publish, unpublish, update, and change the permissions for an app.
- Assign Azure AD groups role-based access to the reports workspace.

Users in the sales department must be able to access only the data of the sales region to which they are assigned in the Sales Employees table.

Power BI has the following row-level security (RLS) Table filter DAX expression for the Sales Employees table.

[EmailAddress] = USERNAME()

RLS will be applied only to the sales department users. Users in all other departments must be able to view all the data.

You need to design the data model to meet the report requirements.

What should you do in Power BI Desktop?

A.
From Power Query, use a DAX expression to add columns to the Orders table to calculate the calendar quarter of the OrderDate column, the calendar month of the OrderDate column, the calendar quarter of the ShippedDate column, and the calendar month of the ShippedDate column.

B.
From Power Query, add columns to the Orders table to calculate the calendar quarter and the calendar month of the OrderDate column.

C.
From Power BI Desktop, use the Auto date/time option when creating the reports.

D.
From Power Query, add a date table. Create an active relationship to the OrderDate column in the Orders table and an inactive relationship to the ShippedDate column in the Orders table.

Answer: B

Explanation:

Use Power Query to calculate calendar quarter and calendar month.

Scenario:

QUESTION NO: 5

You have the tables shown in the following table.

Table name	Column name
Campaigns	Campaign_ID
	Name
Ads	Ad_id
	Name
	Campaign_id
Impressions	Impression_id
	Ad_id
	Site_name
	Impression_time
	Impression_date

The Impressions table contains approximately 30 million records per month.

You need to create an ad analytics system to meet the following requirements:

Present ad impression counts for the day, campaign, and Site_name. The analytics for the last year are required.

Minimize the data model size.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A.
Group the Impressions query in Power Query by Ad_id, Site_name, and Impression_date.

Aggregate by using the CountRows function.

B.
Create one-to-many relationships between the tables.

C.
Create a calculated measure that aggregates by using the COUNTROWS function.

D.
Create a calculated table that contains Ad_id, Site_name, and Impression_date.

Answer: A,B
Explanation:

QUESTION NO: 6

Your company has training videos that are published to Microsoft Stream.

You need to surface the videos directly in a Microsoft Power BI dashboard.

Which type of tile should you add?

A.
video

B.
custom streaming data

C.
text box

D.
web content

Answer: B
Explanation:

The only way to visualize a streaming dataset is to add a tile and use the streaming dataset as a custom streaming data source.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/service-real-time-streaming

QUESTION NO: 7

You open a query in Power Query Editor.

You need to identify the percentage of empty values in each column as quickly as possible.

Which Data Preview option should you select?

A.
Show whitespace

B.
Column profile

C.
Column distribution

D.
Column quality

Answer: D
Explanation:

Column quality: In this section, we can easily see valid, Error and Empty percentage of data values associated with the Selected table.

Note: In Power Query Editor, Under View tab in Data Preview Section we can see the following data profiling functionalities:

Reference:

https://community.powerbi.com/t5/Community-Blog/Data-Profiling-in-Power-BI-Power-BI-Update-April-2019/ba-p/674555

QUESTION NO: 8

You have a prospective customer list that contains 1,500 rows of data. The list contains the following fields:

First name

Last name

Email address

State/Region

Phone number

You import the list into Power Query Editor.

You need to ensure that the list contains records for each State/Region to which you want to target a marketing campaign.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A.
Open the **Advanced Editor**.

B.
Select **Column quality**.

C.
Enable **Column profiling based on entire dataset**.

D.
Select **Column distribution**.

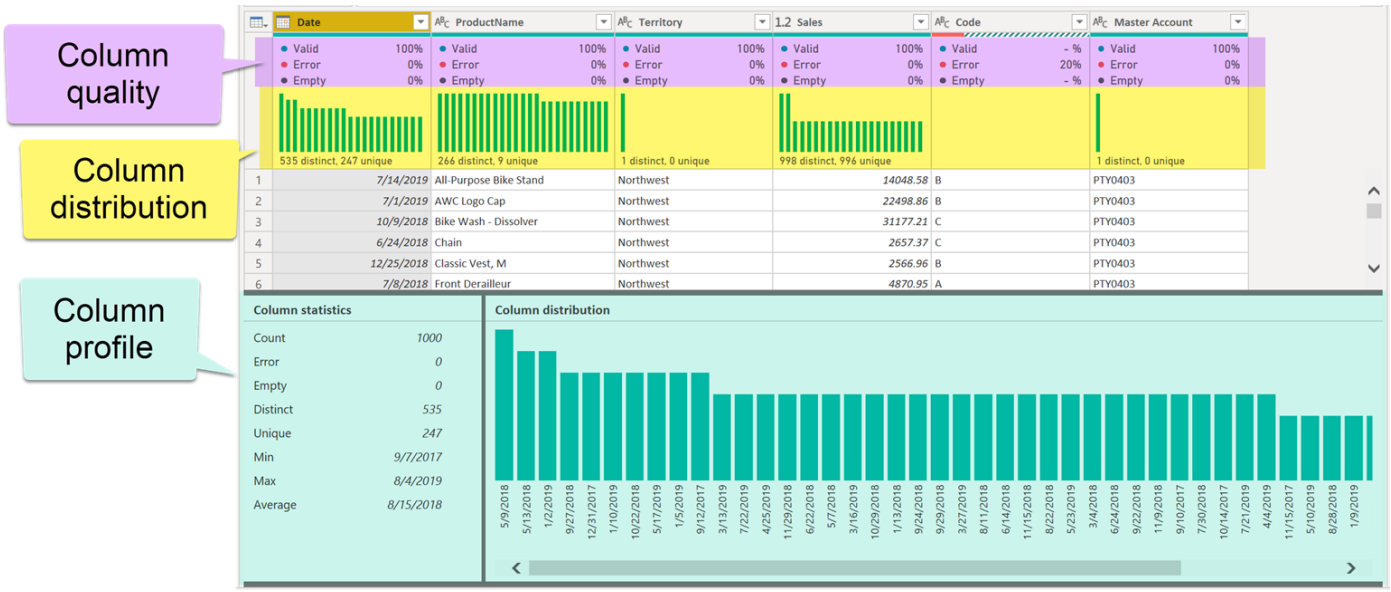
E.
Select **Column profile**.

Answer: D,E

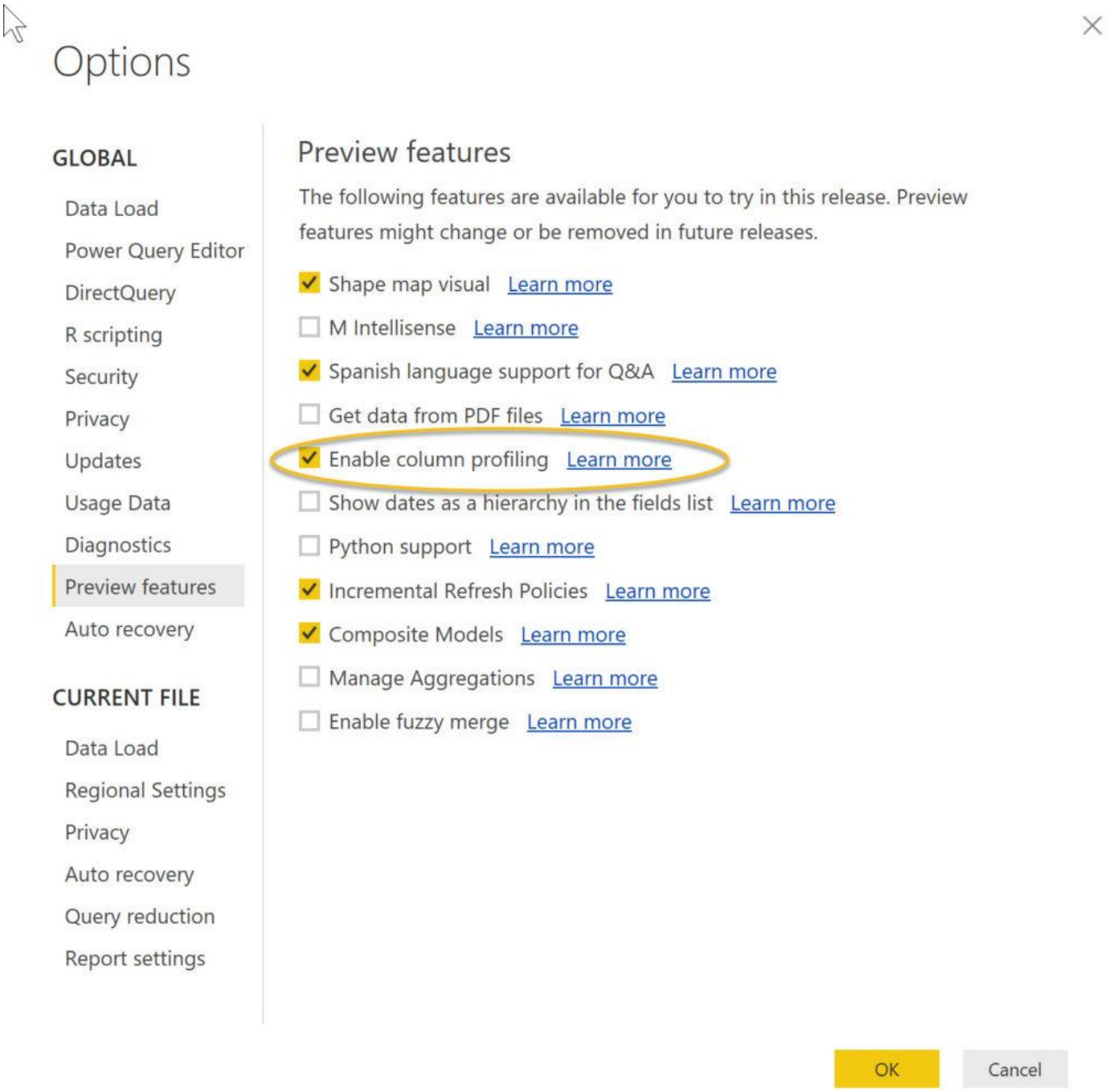
Explanation:

Data Profiling, Quality & Distribution in Power BI / Power Query features

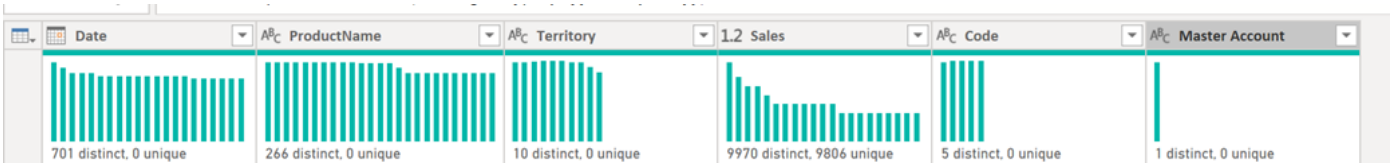
To enable these features, you need to go to the View tab à Data Preview Group à Check the following:



Turn on the Column Profiling feature.



Can use it to visually realize that your query is missing some data because of distinct and uniqueness counts.



Reference:

https://www.poweredsolutions.co/2019/08/13/data-profiling-quality-distribution-in-power-bi-power-query/

https://www.altentertraining.com/microsoft/power-bi/column-profiling-is-good/

QUESTION NO: 9 HOTSPOT

You have an API that returns more than 100 columns. The following is a sample of column names.

client_notified_timestamp

client_notified_source

client_notified_sourceid

client_notified_value

client_responded_timestamp

client_responded_source

client_responded_sourceid

client_responded_value

You plan to include only a subset of the returned columns.

You need to remove any columns that have a suffix of sourceid.

How should you complete the Power Query M code? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
let

 Source = …,
 rawData = Source{[tableId= "clientData"]}[Data],
 removeSources = [ ▼ ] (rawData,
                    [ ▼ ] (Table.ColumnNames(rawData),
                          each [ ▼ ] (_, "sourceid")))
   in
        removeSources
```

- Table.CombineColumn
- Table.FindText
- Table.FromList
- Table.RemoveColumns

- List.Contains
- List.Select
- Table.FindText
- Table.FromList

- Text.Contains
- Text.EndsWith
- Text.From
- Text.StartsWith

Answer:

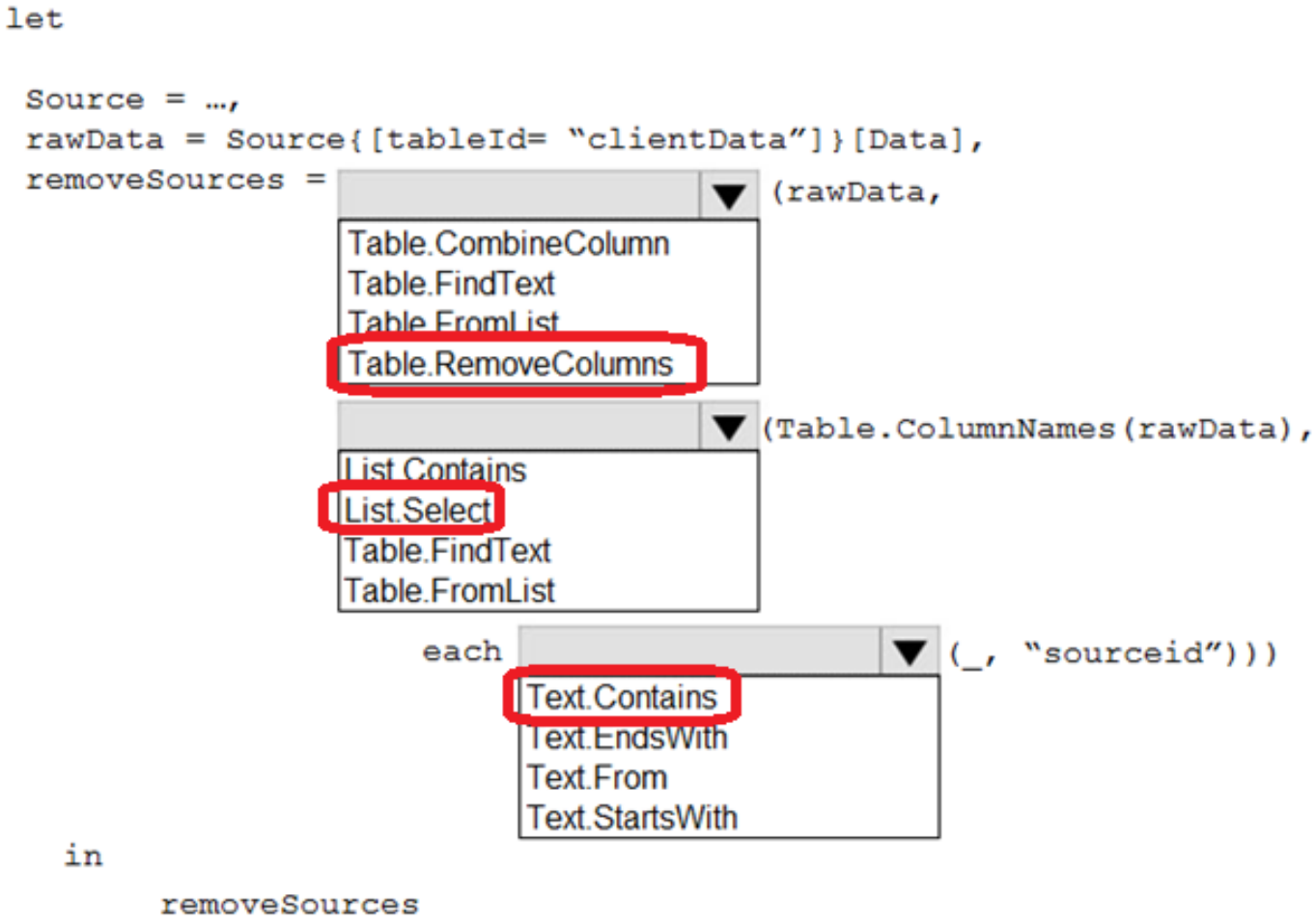
Answer Area

```
let

 Source = …,
 rawData = Source{[tableId= "clientData"]}[Data],
 removeSources = [ Table.CombineColumn / Table.FindText / Table.FromList / Table.RemoveColumns ] (rawData,
                 [ List.Contains / List.Select / Table.FindText / Table.FromList ] (Table.ColumnNames(rawData),
                     each [ Text.Contains / Text.EndsWith / Text.From / Text.StartsWith ] (_, "sourceid")))
   in
        removeSources
```

Explanation:

Answer Area



Box 1: Table.RemoveColumns

When you do "Remove Columns" Power Query uses the Table.RemoveColumns function

Box 2: List.Select

Get a list of columns.

Box 3: Text.Contains

Example code to remove columns with a slash (/):

let

Source = Excel.Workbook(File.Contents("C: Source"), null, true),

#"1_Sheet" = Source{[Item="1",Kind="Sheet"]}[Data],

#"Promoted Headers" = Table.PromoteHeaders(#"1_Sheet", [PromoteAllScalars=true]),

```
// get columns which contains any slash among values

ColumnsToRemove =

List.Select(

// get a list of all columns

Table.ColumnNames(#"Promoted Headers"),

(columnName) =>

let

// get all values of a columns

ColumnValues = Table.Column(#"Promoted Headers", columnName),

// go through values and stop when you find the first occurence of a text containing a slash

// if there is a value with a slash, return true else false

ContainsSlash = List.AnyTrue(List.Transform(ColumnValues, each Text.Contains(_, "/")))

in

ContainsSlash

),

// remove columns

Result = Table.RemoveColumns(#"Promoted Headers", ColumnsToRemove)

in

Result
```

Reference:

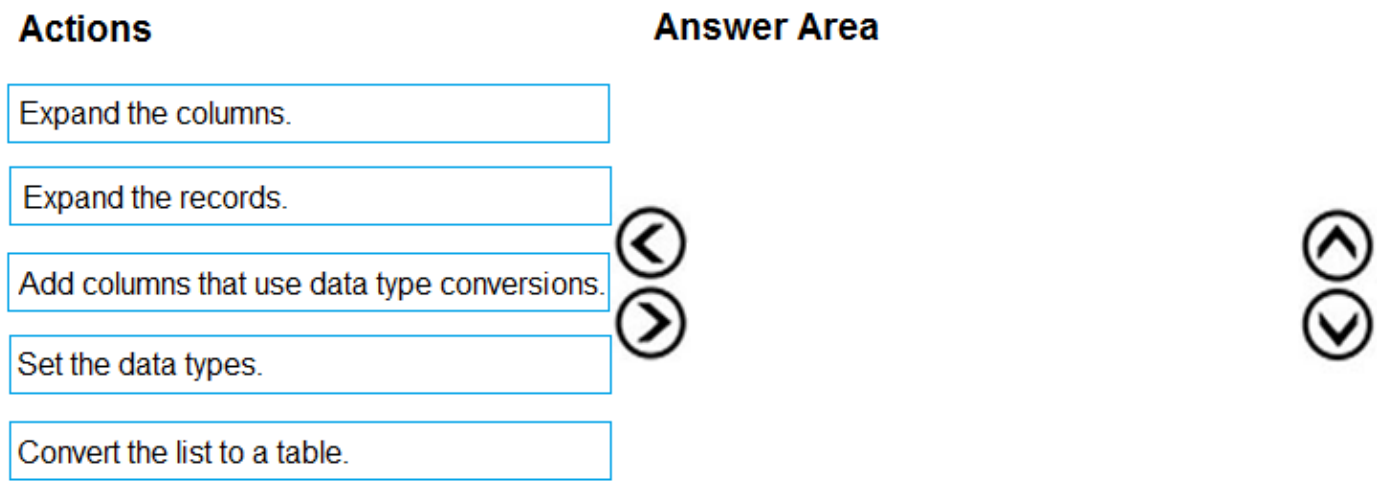
https://community.powerbi.com/t5/Power-Query/Remove-columns-containing-a-certain-value/td-p/759657

QUESTION NO: 10 DRAG DROP

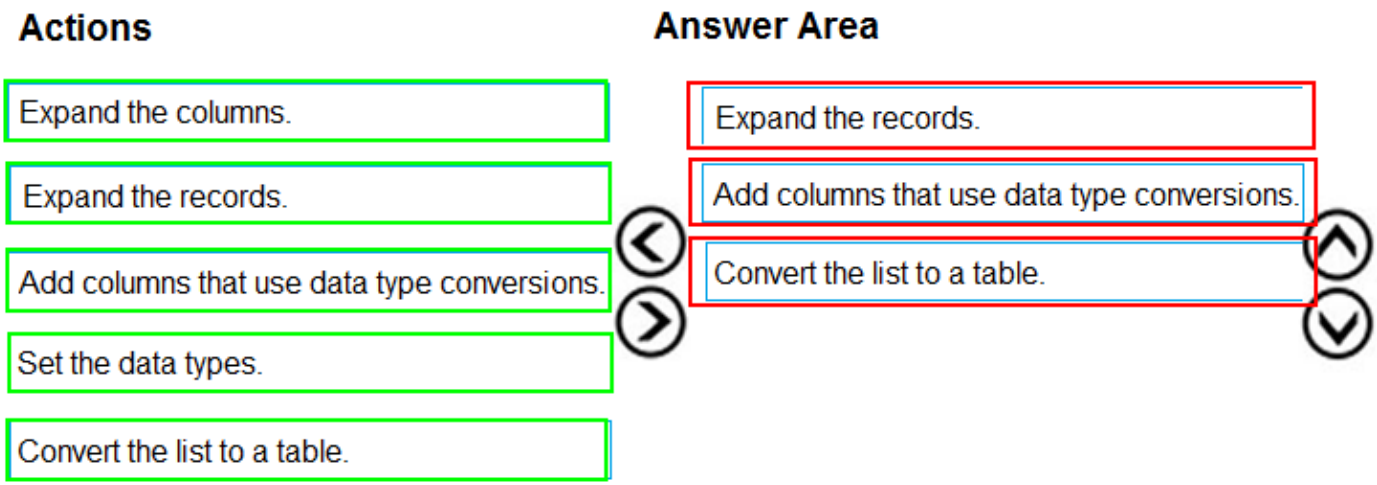
You are building a dataset from a JSON file that contains an array of documents.

You need to import attributes as columns from all the documents in the JSON file. The solution must ensure that date attributes can be used as date hierarchies in Microsoft Power BI reports.

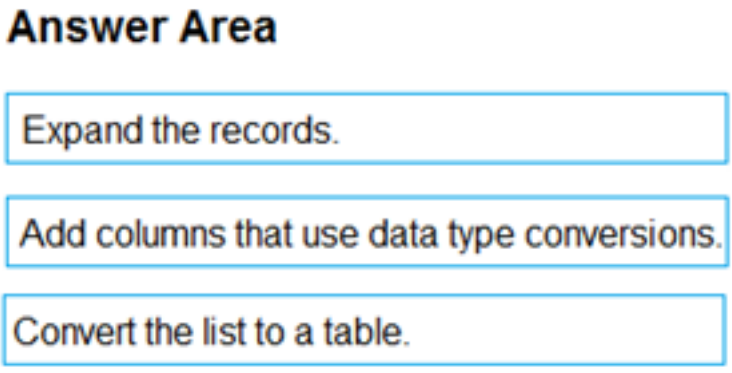
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Answer:



Explanation:



Step 1: Expand the records.

First Open Power BI desktop and navigate to Power Query, import the JSON file, then load the data, click on the record to expand it and to see the record and list.

Step 2: Add columns that use data type conversions.

Step 3: Convert the list to a table

QUESTION NO: 11

You import two Microsoft Excel tables named Customer and Address into Power Query. Customer contains the following columns:

- Customer ID
- Customer Name
- Phone
- Email Address
- Address ID

Address contains the following columns:

- Address ID
- Address Line 1
- Address Line 2
- City
- State/Region
- Country
- Postal Code

The Customer ID and Address ID columns represent unique rows.

You need to create a query that has one row per customer. Each row must contain City,

State/Region, and Country for each customer.

What should you do?

A.
Merge the Customer and Address tables.

B.
Transpose the Customer and Address tables.

C.
Group the Customer and Address tables by the Address ID column.

D.
Append the Customer and Address tables.

Answer: A
Explanation:

There are two primary ways of combining queries: merging and appending.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/desktop-shape-and-combine-data

QUESTION NO: 12

You have the following three versions of an Azure SQL database:

Test

Production

Development

You have a dataset that uses the development database as a data source.

You need to configure the dataset so that you can easily change the data source between the development, test, and production database servers from powerbi.com.

Which should you do?

A.
Create a JSON file that contains the database server names. Import the JSON file to the dataset.

B.
Create a parameter and update the queries to use the parameter.

C.
Create a query for each database server and hide the development tables.

D.
Set the data source privacy level to **Organizational** and use the ReplaceValue Power Query M function.

Answer: B

Explanation:

As you can't edit datasets data sources in Power BI service, we recommend using parameters to store connection details such as instance names and database names, instead of using a static connection string. This allows you to manage the connections through the Power BI service web portal, or using APIs, at a later stage.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/deployment-pipelines-best-practices

QUESTION NO: 13

You have a CSV file that contains user complaints. The file contains a column named Logged. Logged contains the date and time each complaint occurred. The data in Logged is in the following format: 2018-12-31 at 08:59.

You need to be able to analyze the complaints by the logged date and use a built-in date hierarchy.

What should you do?

A.
Split the Logged column by using at as the delimiter.

B.
Apply a transformation to extract the last 11 characters of the Logged column and set the data type of the new column to **Date**.

C.
Apply a transformation to extract the last 11 characters of the Logged column.

D.
Apply the Parse function from the Date transformations options to the Logged column.

Answer: A
Explanation:

The column needs to be in Date format. We need to split the column to a date part and a time of day part.

In Power Query, you can split a column through different methods. In this case, the column(s) selected can be split by a delimiter.

Reference:

https://docs.microsoft.com/en-us/power-query/split-columns-delimiter

QUESTION NO: 14

You have an Azure SQL database that contains sales transactions. The database is updated frequently.

You need to generate reports from the data to detect fraudulent transactions. The data must be visible within five minutes of an update.

How should you configure the data connection?

A.
Add a SQL statement.

B.
Set Data Connectivity mode to **DirectQuery**.

C.
Set the Command timeout in minutes setting.

D.
Set Data Connectivity mode to **Import**.

Answer: B

Explanation:

With Power BI Desktop, when you connect to your data source, it's always possible to import a copy of the data into the Power BI Desktop. For some data sources, an alternative approach is available: connect directly to the data source using DirectQuery.

DirectQuery: No data is imported or copied into Power BI Desktop. For relational sources, the selected tables and columns appear in the Fields list. For multi-dimensional sources like SAP Business Warehouse, the dimensions and measures of the selected cube appear in the Fields list. As you create or interact with a visualization, Power BI Desktop queries the underlying data source, so you're always viewing current data.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/desktop-use-directquery

https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-add-column-from-example

https://www.exceljetconsult.com.ng/home/blog/power-query-split-date-and-time-into-separate-columns/

QUESTION NO: 15

You have a data model that contains many complex DAX expressions. The expressions contain frequent references to the RELATED and RELATEDTABLE functions.

You need to recommend a solution to minimize the use of the RELATED and RELATEDTABLE functions.

What should you recommend?

A.
Split the model into multiple models.

B.
Hide unused columns in the model.

C.
Merge tables by using Power Query.

D.

Transpose the required columns.

Answer: C

Explanation:

Combining data means connecting to two or more data sources, shaping them as needed, then consolidating them into a useful query.

When you have one or more columns that you'd like to add to another query, you merge the queries.

Note: The RELATEDTABLE function is a shortcut for CALCULATETABLE function with no logical expression.

CALCULATETABLE evaluates a table expression in a modified filter context and returns A table of values.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/desktop-shape-and-combine-data

QUESTION NO: 16

You have a large dataset that contains more than 1 million rows. The table has a datetime column named Date.

You need to reduce the size of the data model without losing access to any data.

What should you do?

A.
Round the hour of the Date column to startOfHour.

B.
Change the data type of the Date column to **Text**.

C.
Trim the Date column.

D.
Split the Date column into two columns, one that contains only the time and another that contains only the date.

Answer: D

Explanation:

We have to separate date & time tables. Also, we don't need to put the time into the date table, because the time is repeated every day.

Split your DateTime column into a separate date & time columns in fact table, so that you can join the date to the date table & the time to the time table. The time need to be converted to the nearest round minute or second so that every time in your data corresponds to a row in your time table.

Reference:

https://intellipaat.com/community/6461/how-to-include-time-in-date-hierarchy-in-power-bi

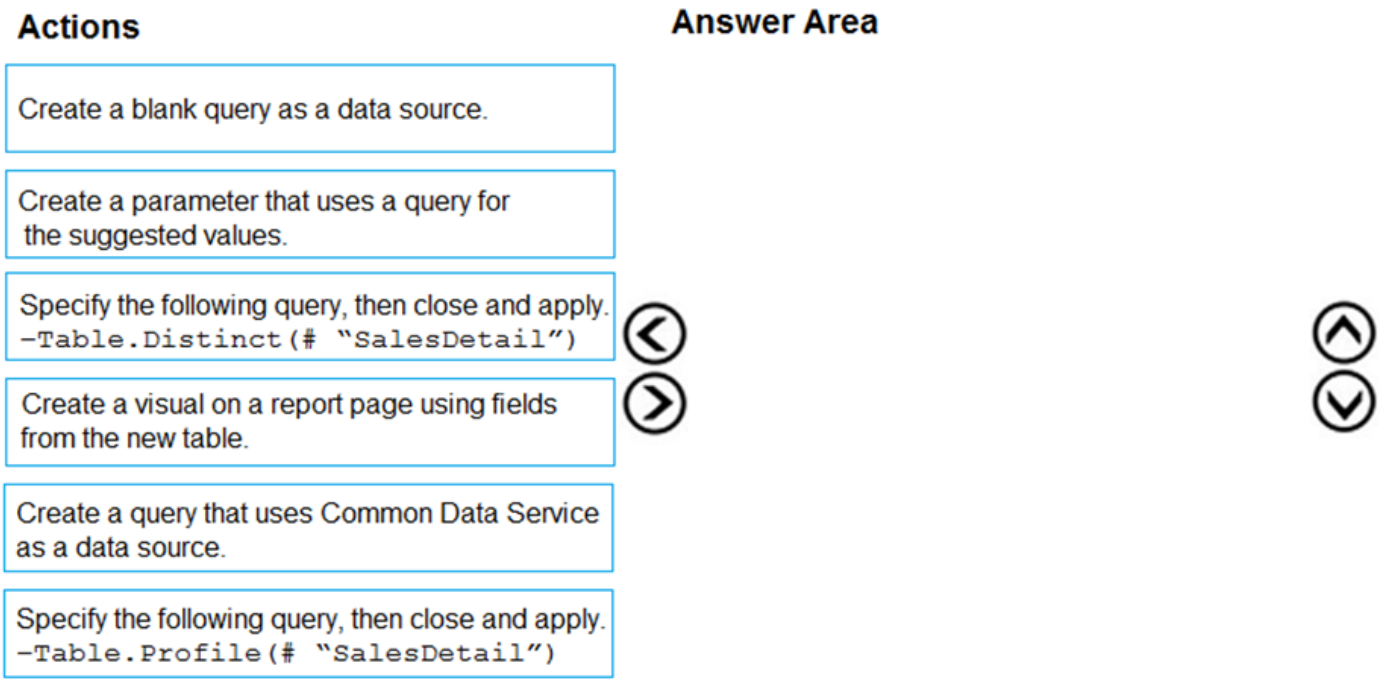
https://apexinsights.net/blog/top-5-tips-to-optimise-data-model

QUESTION NO: 17 DRAG DROP

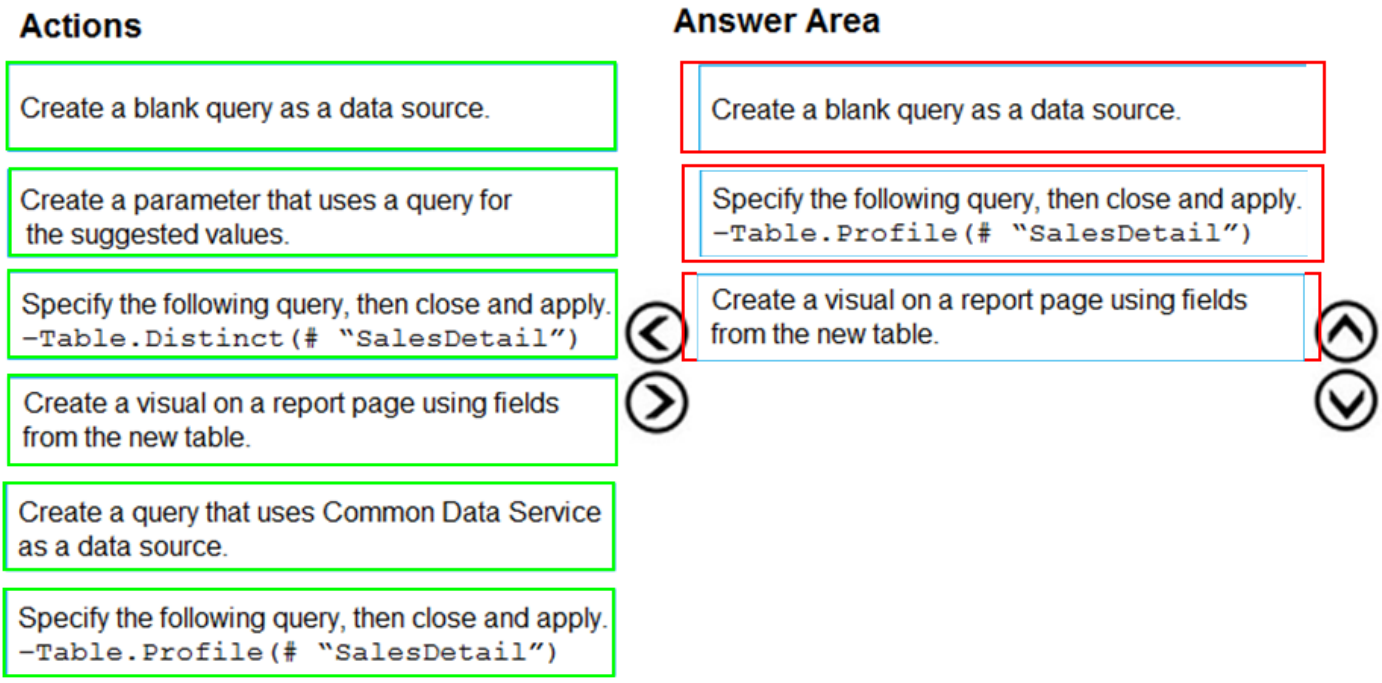
You are modeling data in a table named SalesDetail by using Microsoft Power BI.

You need to provide end users with access to the summary statistics about the SalesDetail data. The users require insights on the completeness of the data and the value distributions.

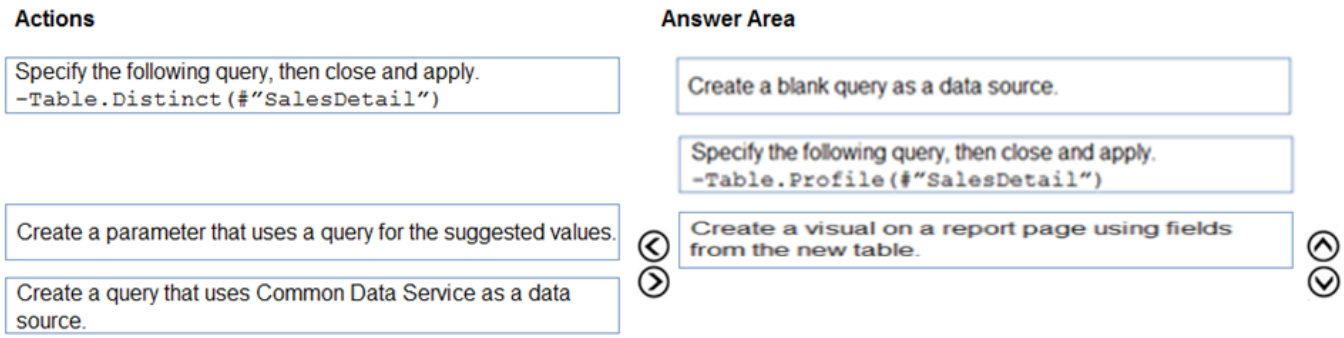
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Answer:

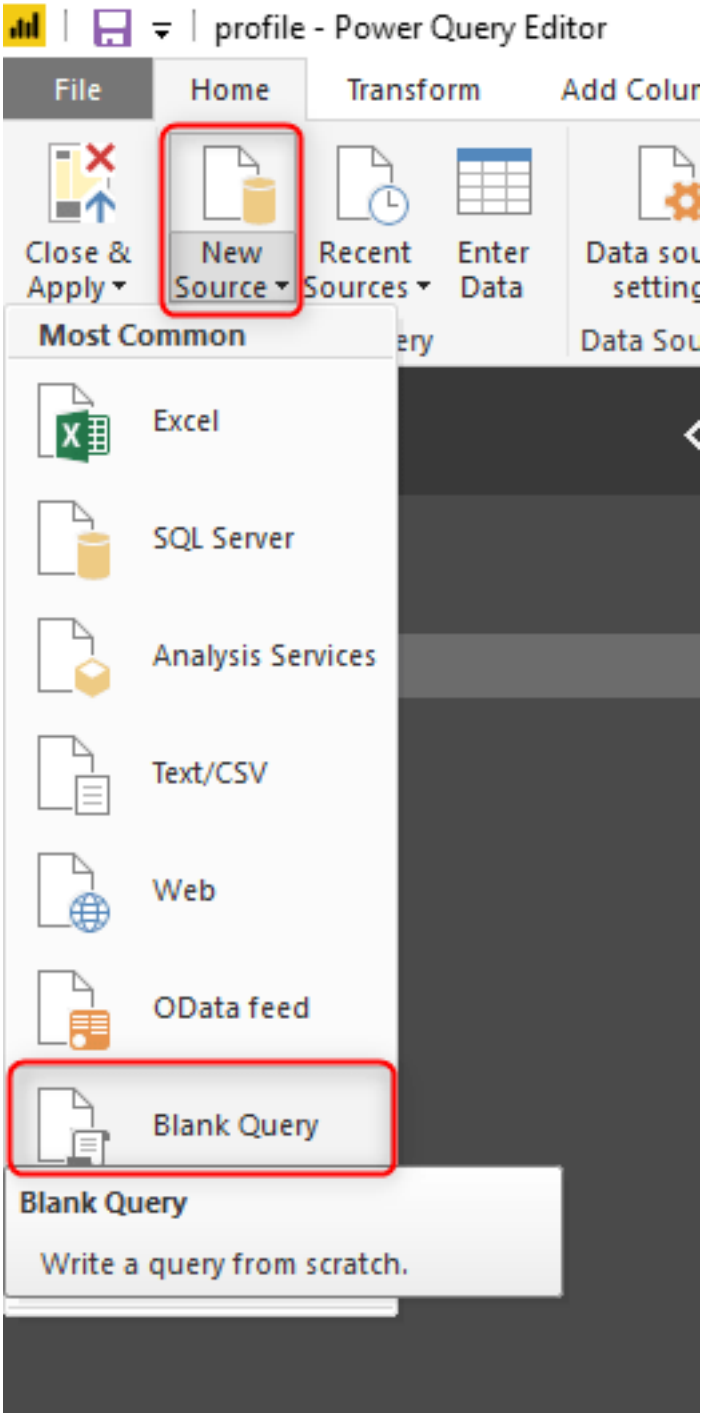


Explanation:



Step 1: Create a blank query as a data source

Start with a New Source in Power Query Editor, and then Blank Query.



Create a parameter that use a query for suggested values.

Step 2: Specify the following query, then close and apply. -Table.Profile(#¨SalesDetail")

In the new blank query, in the formula bar (if you don't see the formula bar, check the formula bar option in the View tab of the Power Query Editor), type below expression:

=Table.Profile()

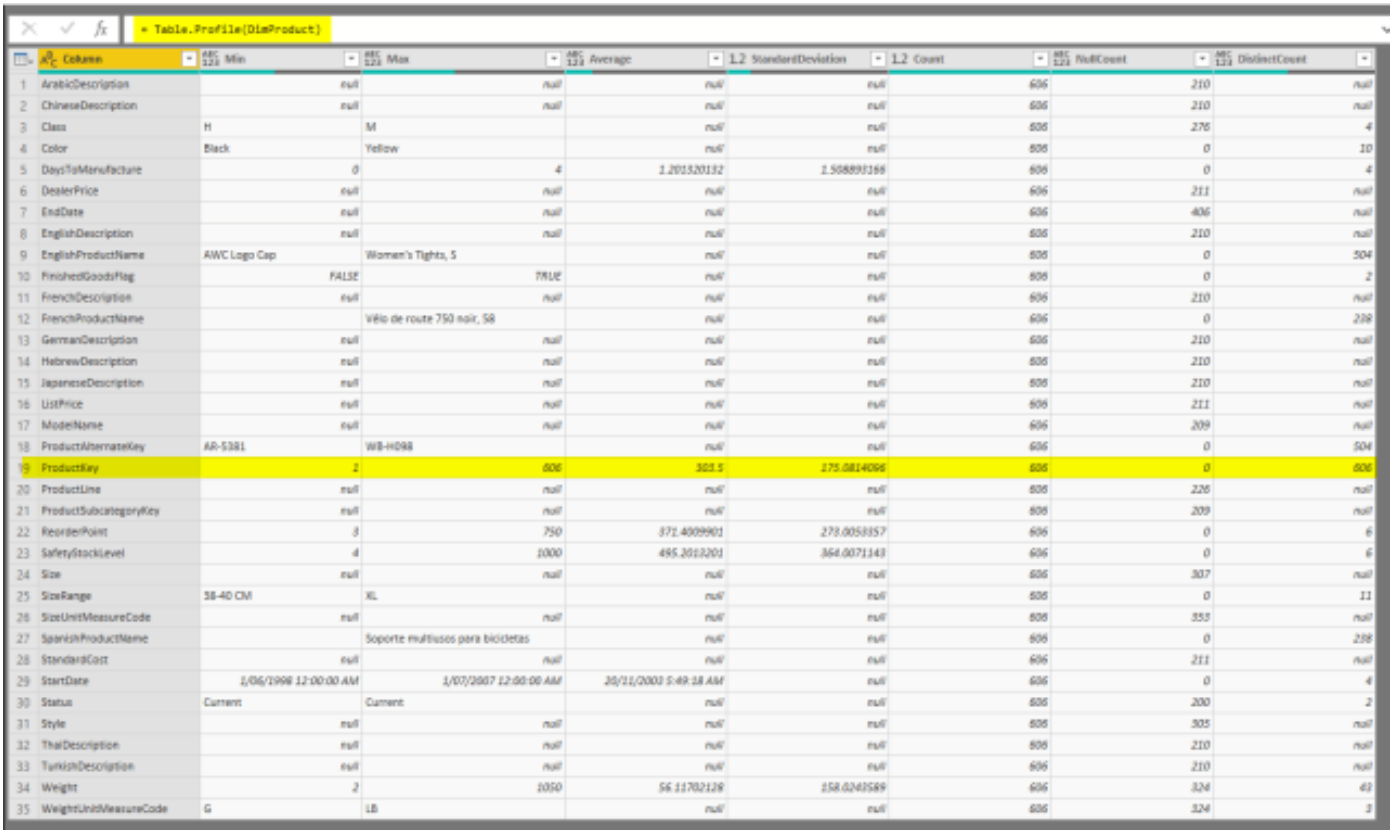
Note that this code is not complete yet, we need to provide a table as the input of this function.

Note: The Table.Profile() function takes a value of type table and returns a table that displays, for each column in the original table, the minimum, maximum, average, standard deviation, count of

values, count of null values and count of distinct values.

Step 3: Create a visual on a report page using fields from the new table.

The profiling data that you get from Table.Profile function is like below;



	Column	Min	Max	Average	StandardDeviation	Count	NullCount	DistinctCount
1	ArabicDescription	null	null	null	null	606	210	null
2	ChineseDescription	null	null	null	null	606	210	null
3	Class	H	M	null	null	606	276	4
4	Color	Black	Yellow	null	null	606	0	10
5	DaysToManufacture	0	4	1.201320132	1.508893166	606	0	4
6	DealerPrice	null	null	null	null	606	211	null
7	EndDate	null	null	null	null	606	406	null
8	EnglishDescription	null	null	null	null	606	210	null
9	EnglishProductName	AWC Logo Cap	Women's Tights, S	null	null	606	0	504
10	FinishedGoodsFlag	FALSE	TRUE	null	null	606	0	2
11	FrenchDescription	null	null	null	null	606	210	null
12	FrenchProductName		Vélo de route 750 noir, 58	null	null	606	0	238
13	GermanDescription	null	null	null	null	606	210	null
14	HebrewDescription	null	null	null	null	606	210	null
15	JapaneseDescription	null	null	null	null	606	210	null
16	ListPrice	null	null	null	null	606	211	null
17	ModelName	null	null	null	null	606	209	null
18	ProductAlternateKey	AR-5381	WB-H098	null	null	606	0	504
19	ProductKey	1	606	303.5	175.0814096	606	0	606
20	ProductLine	null	null	null	null	606	226	null
21	ProductSubcategoryKey	null	null	null	null	606	209	null
22	ReorderPoint	3	750	371.4009901	273.0058357	606	0	6
23	SafetyStockLevel	4	1000	495.2013201	364.0071143	606	0	6
24	Size	null	null	null	null	606	307	null
25	SizeRange	38-40 CM	XL	null	null	606	0	11
26	SizeUnitMeasureCode	null	null	null	null	606	355	null
27	SpanishProductName		Soporte multiusos para bicicletas	null	null	606	0	238
28	StandardCost	null	null	null	null	606	211	null
29	StartDate	1/06/1998 12:00:00 AM	1/07/2007 12:00:00 AM	30/11/2003 5:49:18 AM	null	606	0	4
30	Status	Current	Current	null	null	606	200	2
31	Style	null	null	null	null	606	305	null
32	ThaiDescription	null	null	null	null	606	210	null
33	TurkishDescription	null	null	null	null	606	210	null
34	Weight	2	1050	56.11702128	158.0243589	606	324	43
35	WeightUnitMeasureCode	G	LB	null	null	606	324	3

After loading the data into Power BI, you'll have the table with all columns, and it can be used in any visuals.

Reference:

https://radacad.com/create-a-profiling-report-in-power-bi-give-the-end-user-information-about-the-data

QUESTION NO: 18

You create the following step by using Power Query Editor.

- Table.ReplaceValue(

SalesLT_Address,"1318","1319",Replacer.ReplaceText,

{"AddressLine1"}

)

A row has a value of 21318 Lasalle Street in the AddressLine1 column.

What will the value be when the step is applied?

A.
1318

B.
1319

C.
21318 Lasalle Street

D.
21319 Lasalle Street

Answer: D
Explanation:

Example:

Replace the text "ur" with the text "or" in the table.

```
Table.ReplaceValue(
    Table.FromRecords({
        [a = 1, b = "hello"],
        [a = 3, b = "wurld"]
    }),
    "ur",
    "or",
    Replacer.ReplaceText,
    {"b"}
)
```

a	b
1	hello
3	world

Reference:

https://docs.microsoft.com/en-us/powerquery-m/table-replacevalue

QUESTION NO: 19

You have a Microsoft Power BI report. The size of PBIX file is 550 MB. The report is accessed by using an App workspace in shared capacity of powerbi.com.

The report uses an imported dataset that contains one fact table. The fact table contains 12 million rows. The dataset is scheduled to refresh twice a day at 08:00 and 17:00.

The report is a single page that contains 15 AppSource visuals and 10 default visuals.

Users say that the report is slow to load the visuals when they access and interact with the report.

You need to recommend a solution to improve the performance of the report.

What should you recommend?

A.
Increase the number of times that the dataset is refreshed.

B.
Split the visuals onto multiple pages.

C.
Change the imported dataset to DirectQuery.

D.
Implement row-level security (RLS).

Answer: C
Explanation:

DirectQuery: No data is imported or copied into Power BI Desktop.

Import: The selected tables and columns are imported into Power BI Desktop. As you create or interact with a visualization, Power BI Desktop uses the imported data.

Benefits of using DirectQuery

There are a few benefits to using DirectQuery:

The 1-GB dataset limitation doesn't apply to DirectQuery.

Note:

There are several versions of this question in the exam. The question can have other incorrect answer options, include the following:

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/desktop-use-directquery

QUESTION NO: 20

You create a dashboard by using the Microsoft Power BI Service. The dashboard contains a card visual that shows total sales from the current year.

You grant users access to the dashboard by using the Viewer role on the workspace.

A user wants to receive daily notifications of the number shown on the card visual.

You need to automate the notifications.

What should you do?

A.
Create a data alert.

B.
Share the dashboard to the user.

C.
Create a subscription.

D.
Tag the user in a comment.

Answer: C
Explanation:

You can subscribe yourself and your colleagues to the report pages, dashboards, and paginated reports that matter most to you. Power BI e-mail subscriptions allow you to:

Note: Email subscriptions don't support most custom visuals. The one exception is those custom visuals that have been certified.

Email subscriptions don't support R-powered custom visuals at this time.

Reference:

https://docs.microsoft.com/en-us/power-bi/collaborate-share/service-report-subscribe

https://docs.microsoft.com/en-us/power-bi/create-reports/service-set-data-alerts

QUESTION NO: 21

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some

question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are modeling data by using Microsoft Power BI. Part of the data model is a large Microsoft SQL Server table named Order that has more than 100 million records.

During the development process, you need to import a sample of the data from the Order table.

Solution: From Power Query Editor, you import the table and then add a filter step to the query.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

The filter is applied after the data is imported.

Instead add a WHERE clause to the SQL statement.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/service-gateway-sql-tutorial

QUESTION NO: 22

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result,

these questions will not appear in the review screen.

You are modeling data by using Microsoft Power BI. Part of the data model is a large Microsoft SQL Server table named Order that has more than 100 million records.

During the development process, you need to import a sample of the data from the Order table.

Solution: You add a WHERE clause to the SQL statement.

Does this meet the goal?

A.
Yes

B.
No

Answer: A
Explanation:

The WHERE clause has its effects before the data is imported.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/service-gateway-sql-tutorial

QUESTION NO: 23

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a parameter named DataSourceExcel that holds the file name and location of a Microsoft Excel data source.

You need to update the query to reference the parameter instead of multiple hard-coded copies of the location within each query definition.

Solution: In the Power Query M code, you replace references to the Excel file with DataSourceExcel.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

Instead modify the source step of the queries to use DataSourceExcel as the file path.

Note: Parameterising a Data Source could be used in many different use cases. From connecting to different data sources defined in Query Parameters to load different combinations of columns.

Reference:

https://www.biinsight.com/power-bi-desktop-query-parameters-part-1/

QUESTION NO: 24

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a parameter named DataSourceExcel that holds the file name and location of a Microsoft Excel data source.

You need to update the query to reference the parameter instead of multiple hard-coded copies of the location within each query definition.

Solution: You modify the source step of the queries to use DataSourceExcel as the file path.

Does this meet the goal?

A.
Yes

B.
No

Answer: A
Explanation:

Parameterising a Data Source could be used in many different use cases. From connecting to different data sources defined in Query Parameters to load different combinations of columns.

Reference:

https://www.biinsight.com/power-bi-desktop-query-parameters-part-1/

QUESTION NO: 25

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You create a parameter named DataSourceExcel that holds the file name and location of a Microsoft Excel data source.

You need to update the query to reference the parameter instead of multiple hard-coded copies of the location within each query definition.

Solution: You create a new query that references DataSourceExcel.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

Instead modify the source step of the queries to use DataSourceExcel as the file path.

Note: Parameterising a Data Source could be used in many different use cases. From connecting to different data sources defined in Query Parameters to load different combinations of columns.

Reference:

https://www.biinsight.com/power-bi-desktop-query-parameters-part-1/

QUESTION NO: 26

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are modeling data by using Microsoft Power BI. Part of the data model is a large Microsoft SQL Server table named Order that has more than 100 million records.

During the development process, you need to import a sample of the data from the Order table.

Solution: You add a report-level filter that filters based on the order date.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

The filter is applied after the data is imported.

Instead add a WHERE clause to the SQL statement.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/service-gateway-sql-tutorial

QUESTION NO: 27

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You are modeling data by using Microsoft Power BI. Part of the data model is a large Microsoft SQL Server table named Order that has more than 100 million records.

During the development process, you need to import a sample of the data from the Order table.

Solution: You write a DAX expression that uses the FILTER function.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

The filter is applied after the data is imported.

Instead add a WHERE clause to the SQL statement.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/service-gateway-sql-tutorial

QUESTION NO: 28

You have a Power BI dashboard that monitors the quality of manufacturing processes. The dashboard contains the following elements:

- A line chart that shows the number of defective products manufactured by day.
- A KPI visual that shows the current daily percentage of defective products manufactured.

You need to be notified when the daily percentage of defective products manufactured exceeds 3%.

What should you create?

A.
a Q&A visual

B.
a subscription

C.
a smart narrative visual

D.
an alert

Answer: D

Explanation:

Reference:

https://docs.microsoft.com/en-us/power-bi/consumer/end-user-alerts

QUESTION NO: 29 DRAG DROP

You are preparing a financial report in Power BI.

You connect to the data stored in a Microsoft Excel spreadsheet by using Power Query Editor as shown in the following exhibit.

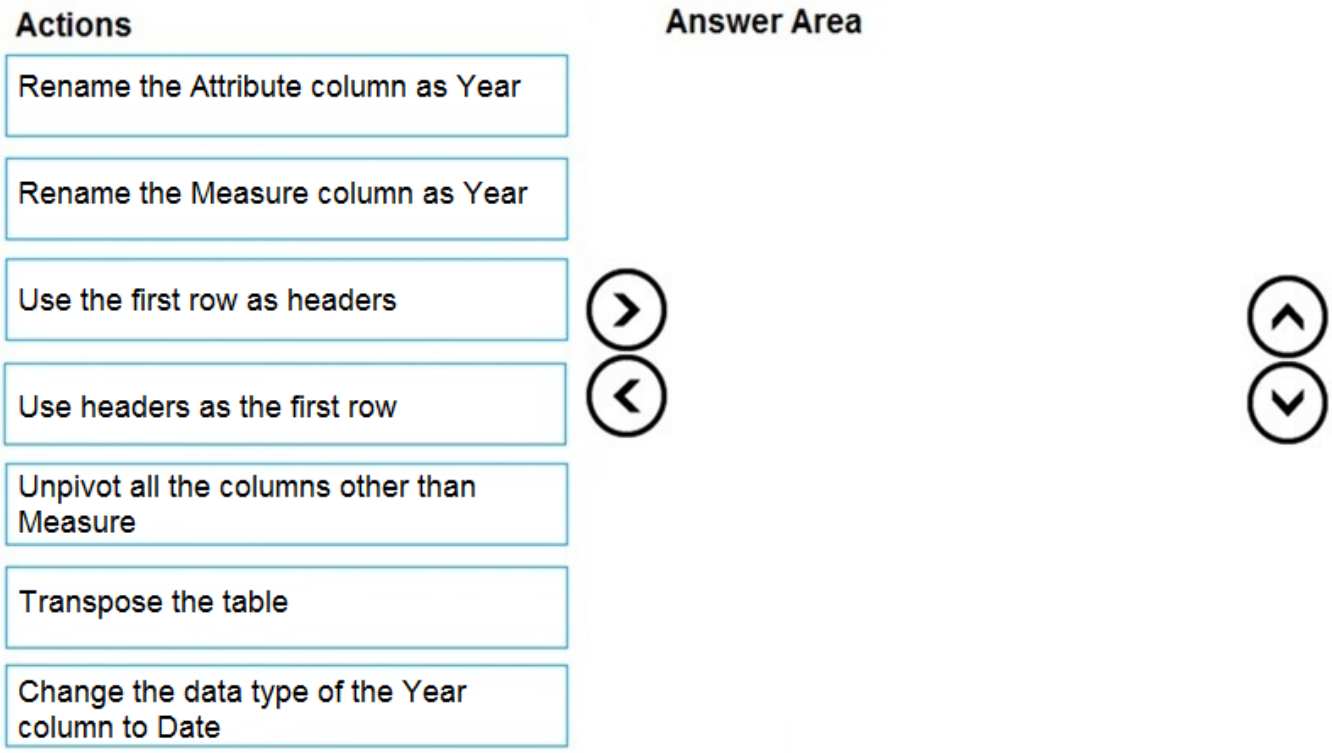
	Column1	1.2 Column2	1.2 Column3	1.2 Column4	1.2 Column5	1.2 Column6
1	Measure	2016	2017	2018	2019	2020
2	Revenue	0.5	0.6	0.55	0.61	0.42
3	Overheads	0.11	0.330410907	0.167055779	0.360178153	0.183179995
4	Cost of Goods	0.204388253	0.165848321	0.25	0.17	0.109073918

You need to prepare the data to support the following:

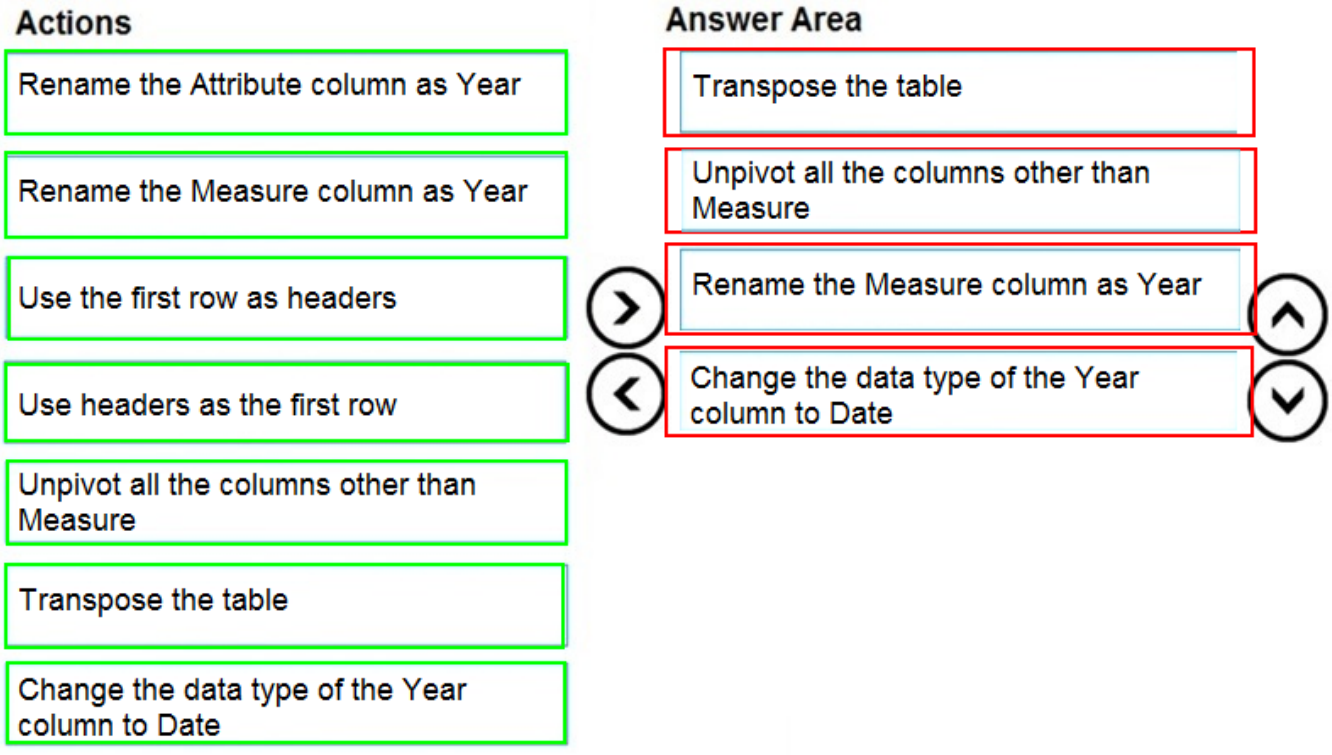
Visualizations that include all measures in the data over time

Year-over-year calculations for all the measures

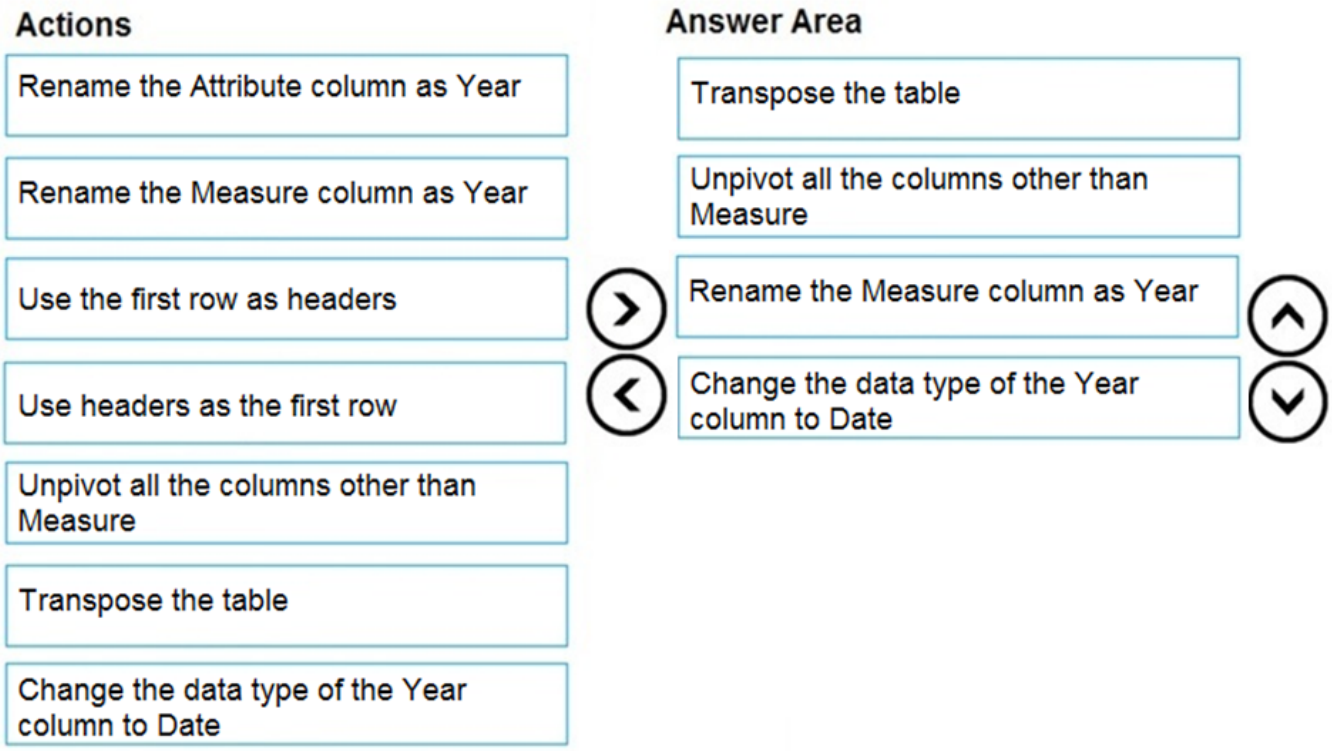
Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Answer:



Explanation:

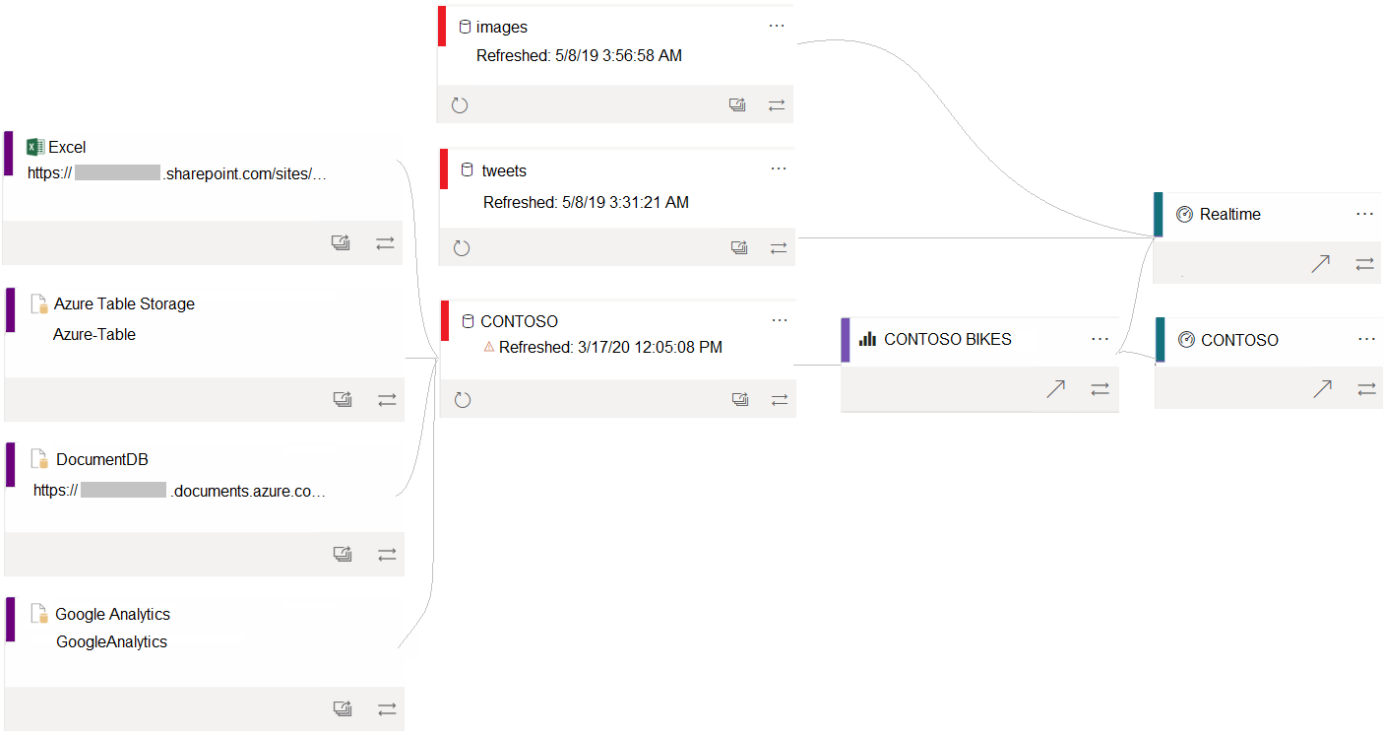


Reference:

https://support.microsoft.com/en-us/office/unpivot-columns-power-query-0f7bad4b-9ea1-49c1-9d95-f588221c7098

QUESTION NO: 30 HOTSPOT

You have the data lineage shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

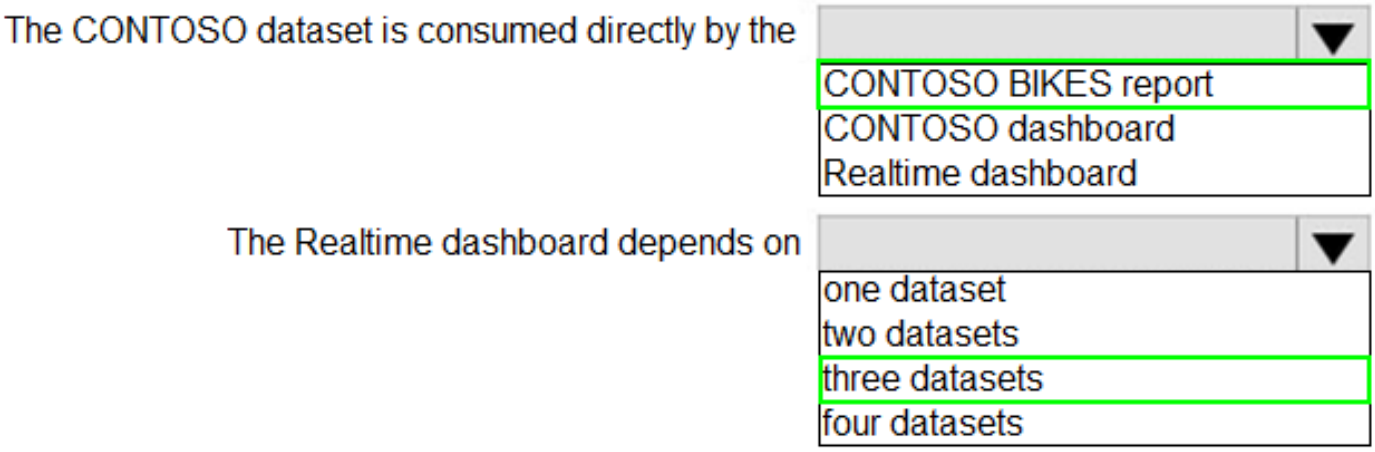
Answer Area

The CONTOSO dataset is consumed directly by the [ ]
- CONTOSO BIKES report
- CONTOSO dashboard
- Realtime dashboard

The Realtime dashboard depends on [ ]
- one dataset
- two datasets
- three datasets
- four datasets

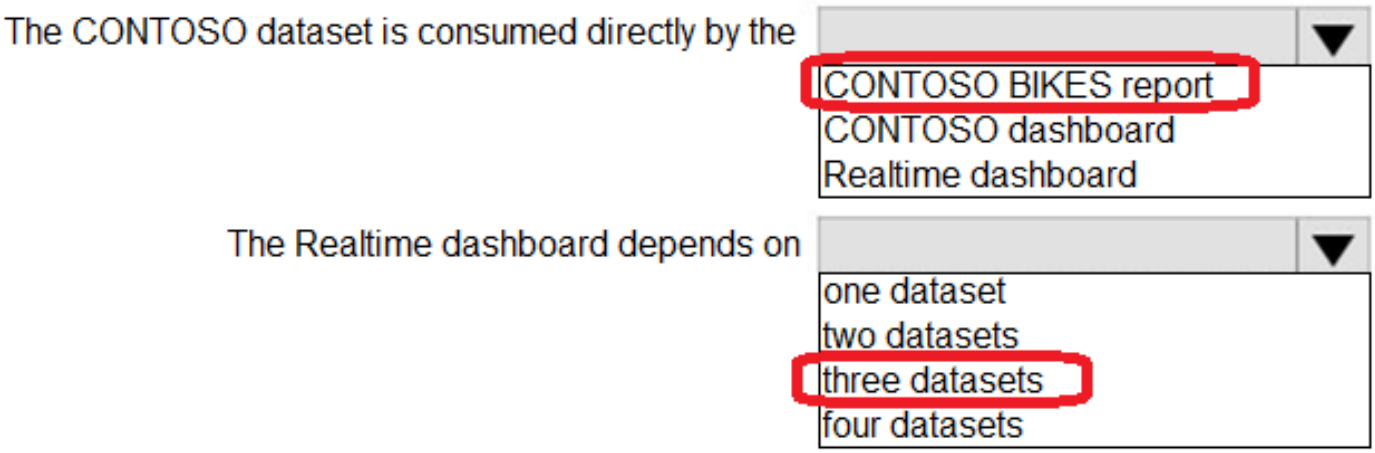
Answer:

Answer Area



Explanation:

Answer Area



Box 1: CONTOSO BIKES report

Box 2: three datasets

Images, tweets and the Contoso datasets.

QUESTION NO: 31

You are reviewing a query that produces 10,000 rows in the Power Query Editor.

You need to identify whether a column contains only unique values.

Which two Data Preview options can you use? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A.
Column profile

B.
Column distribution

C.
Show whitespace

D.
Column quality

E.
Monospaced

Answer: A,B

Explanation:

B: Column distribution: This feature provides a set of visuals underneath the names of the columns that showcase the frequency and distribution of the values in each of the columns. The data in these visualizations is sorted in descending order from the value with the highest frequency.

By hovering over the distribution data in any of the columns, you get information about the overall data in the column (with distinct count and unique values).

A: Column profile: This feature provides a more in-depth look at the data in a column [compared to column distribution]. Apart from the column distribution chart, it contains a column statistics chart.

Reference:

https://docs.microsoft.com/en-us/power-query/data-profiling-tools

QUESTION NO: 32 HOTSPOT

You have two Azure SQL databases that contain the same tables and columns.

For each database, you create a query that retrieves data from a table named Customer.

You need to determine the Customer tables into a single table. The solution must minimize the size of the data model and support scheduled refresh in powerbi.com.

What should you do? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Option to use to combine the Customer tables:
- Append Queries.
- Append Queries as New.
- Merge Queries.
- Merge Queries as New.

Action to perform on the original two SQL database queries:
- Delete the queries.
- Disable including the query in report refresh.
- Disable loading the query to the data model.
- Duplicate the queries.

Answer:

Answer Area

Option to use to combine the Customer tables:
- Append Queries.
- Append Queries as New.
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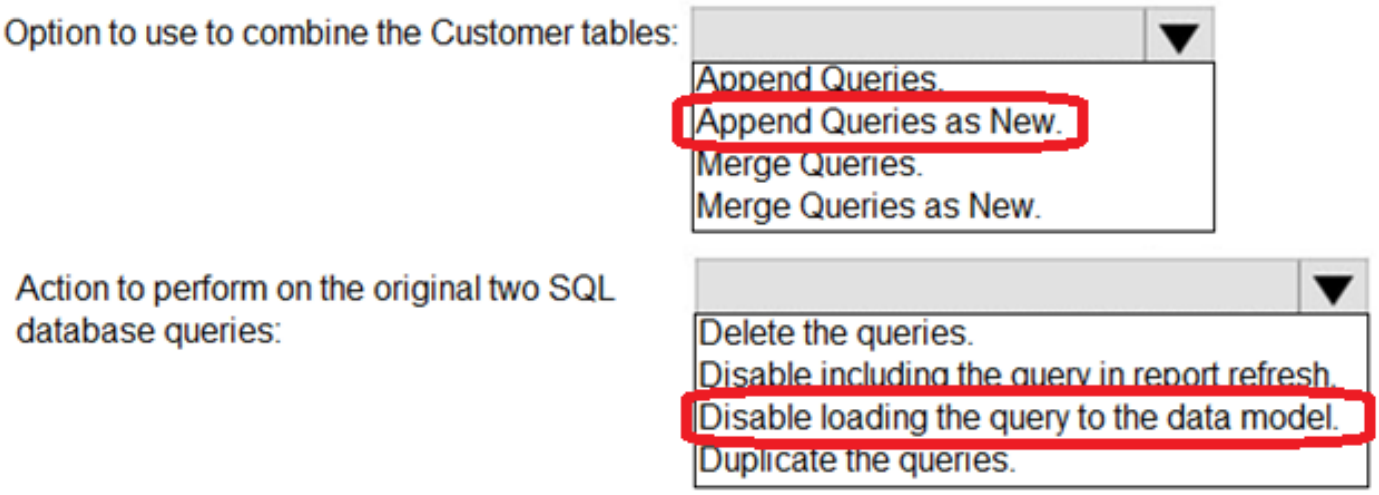
Explanation:

Answer Area



Box 1: Append Queries as New.

There are two primary ways of combining queries: merging and appending.

Box 2: Disable loading the query to the data model

For every query that loads into model memory will be consumed. and Memory is our asset in the Model, less memory consumption leads to better performance in most of the cases. The best approach is to disable loading.

Reference:

https://docs.microsoft.com/en-us/power-query/append-queries

QUESTION NO: 33 HOTSPOT

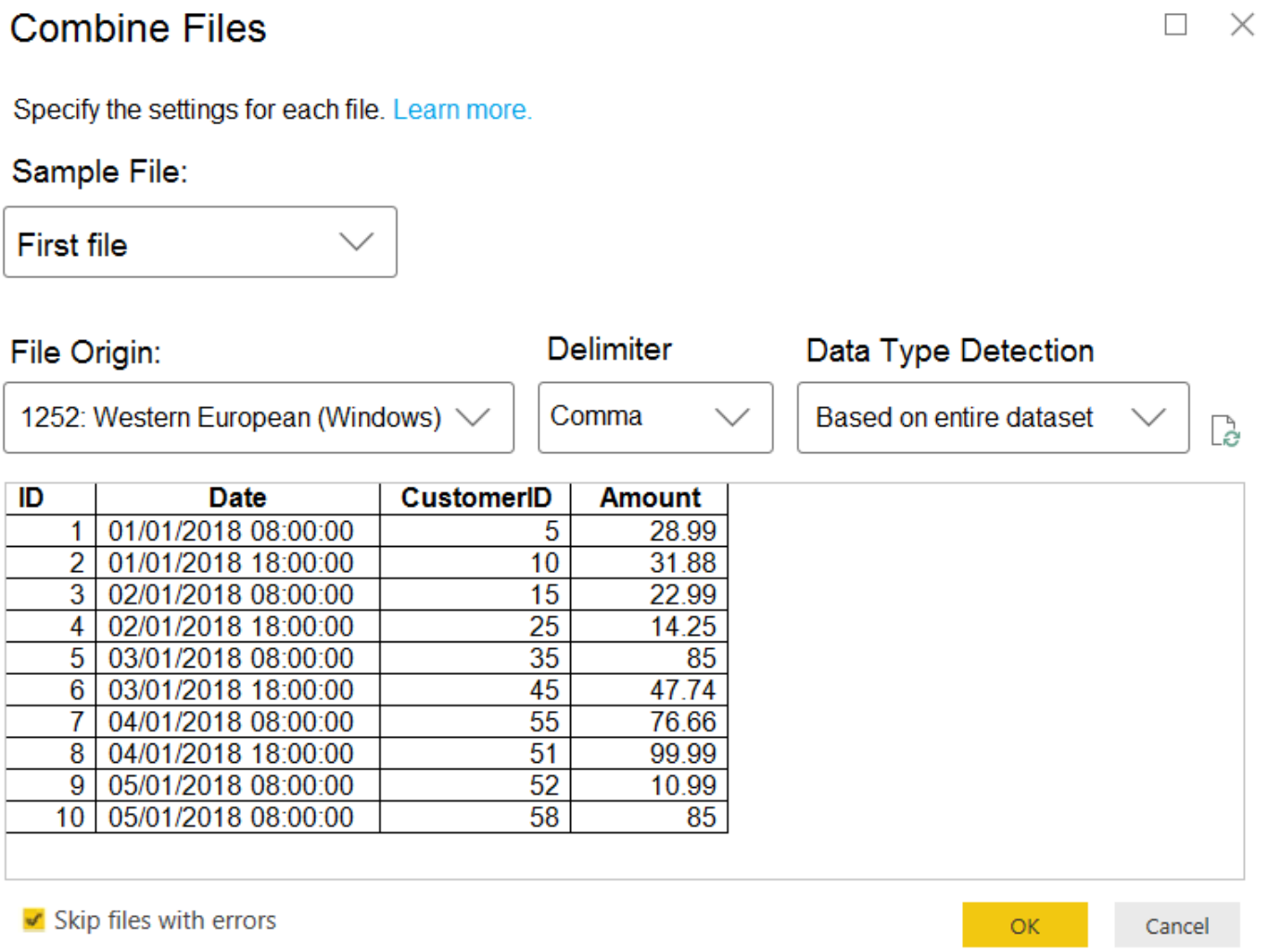
You have a folder of monthly transaction extracts.

You plan to create a report to analyze the transaction data.

You receive the following email message: "Hi, I've put 24 files of monthly transaction data onto the shared drive. File Transactions201801.csv through Transaction201812.csv have four columns while files Transactions201901.csv through Transaction201912.csv have the same four columns plus an additional three columns. Each file contains 10 to 50 transactions."

You get data from the folder and select **Combine & Load**. The Combine Files dialog box is shown

in the exhibit. (Click the **Exhibit** tab.)



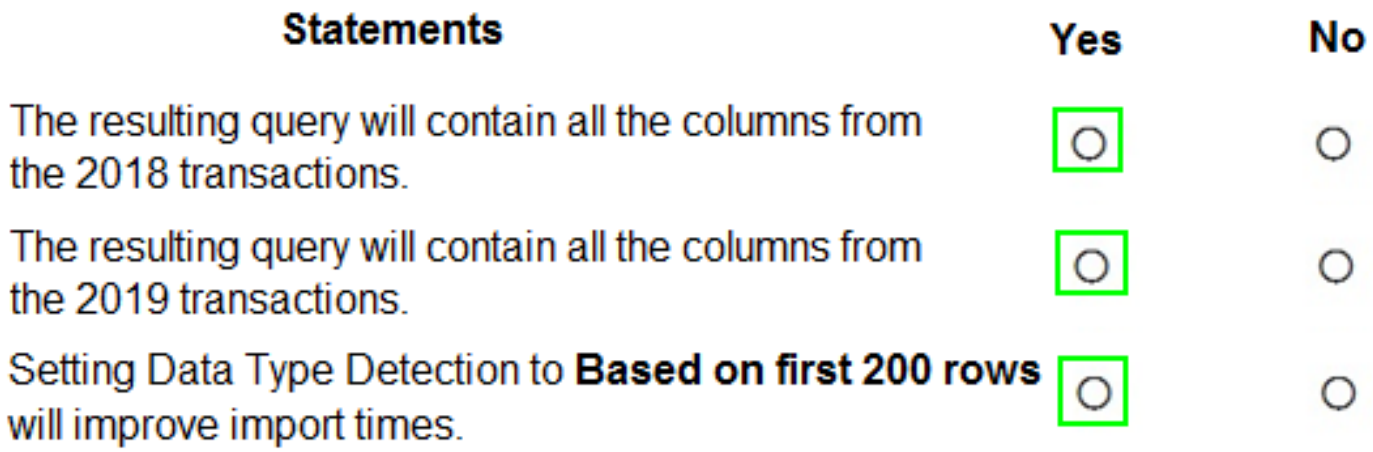
ID	Date	CustomerID	Amount
1	01/01/2018 08:00:00	5	28.99
2	01/01/2018 18:00:00	10	31.88
3	02/01/2018 08:00:00	15	22.99
4	02/01/2018 18:00:00	25	14.25
5	03/01/2018 08:00:00	35	85
6	03/01/2018 18:00:00	45	47.74
7	04/01/2018 08:00:00	55	76.66
8	04/01/2018 18:00:00	51	99.99
9	05/01/2018 08:00:00	52	10.99
10	05/01/2018 08:00:00	58	85

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

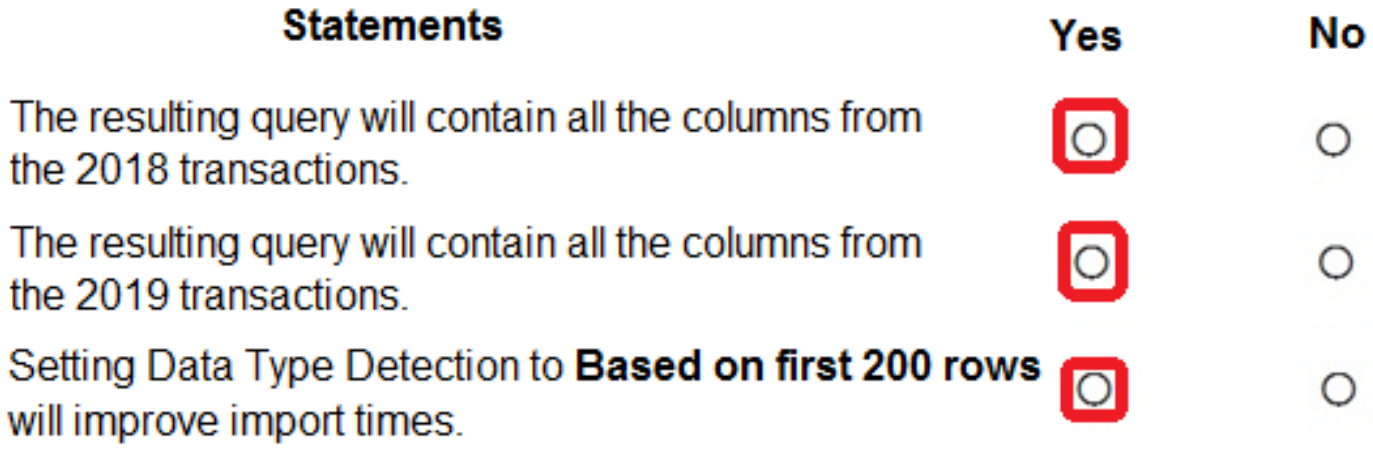
NOTE: Each correct selection is worth one point.

Statements	Yes	No
The resulting query will contain all the columns from the 2018 transactions.	○	○
The resulting query will contain all the columns from the 2019 transactions.	○	○
Setting Data Type Detection to **Based on first 200 rows** will improve import times.	○	○

Answer:



Explanation:



Box 1: Yes

The four columns used in the 2018 transactions are already displayed.

Box 2: Yes

The columns used are based on the entire dataset. The additional columns in the 2019 files will be detected.

Box 3: Yes

Note: Under the hoods, Power BI will automatically detect which delimiter to use, and may even promote the first row as headers. You can manually change the delimiter, or define how Power BI should handle data types. You can set it to automatically detect data types based on first 200 rows, or the entire dataset or you can even opt out the detection of data types.

QUESTION NO: 34 DRAG DROP

You receive revenue data that must be included in Microsoft Power BI reports.

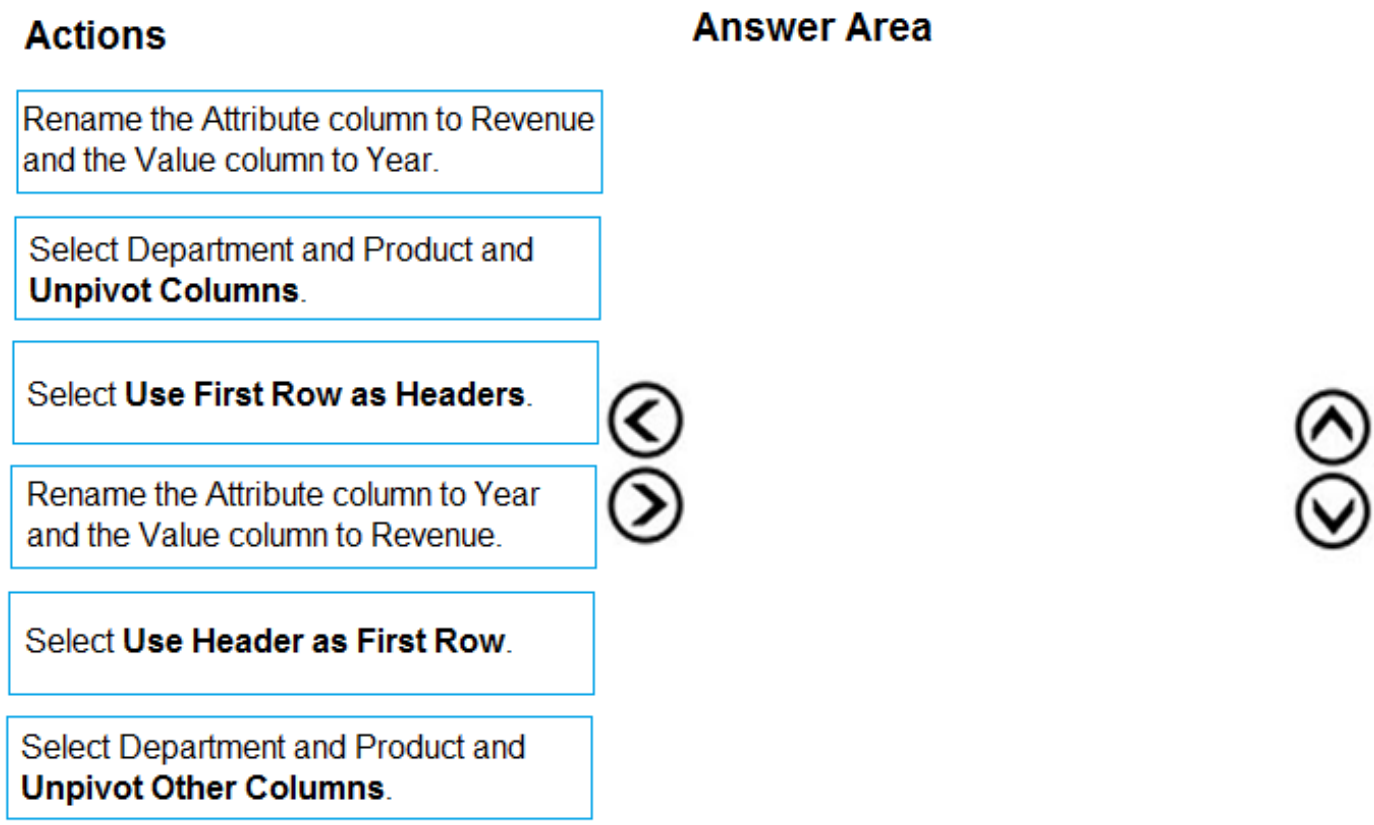
You preview the data from a Microsoft Excel source in Power Query as shown in the following exhibit.

	Column1	Column2	Column3	Column4	Column5	Column6
	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%
1	Department	Product	2016	2017	2018	2019
2	Bikes	Carbon mountainbike	1002815	1006617	1007814	1007239
3	Bikes	Aluminium road bike	1007024	1001454	1005842	1007105
4	Bikes	Touring bike	1003676	1005171	1001669	1003244
5	Accessories	Bell	76713	10247	60590	25927
6	Accessories	Bottle holder	26690	29613	67955	71466
7	Accessories	Satnav	83189	40113	71684	24697
8	Accessories	Mobilephone holder	68641	80336	58099	45706

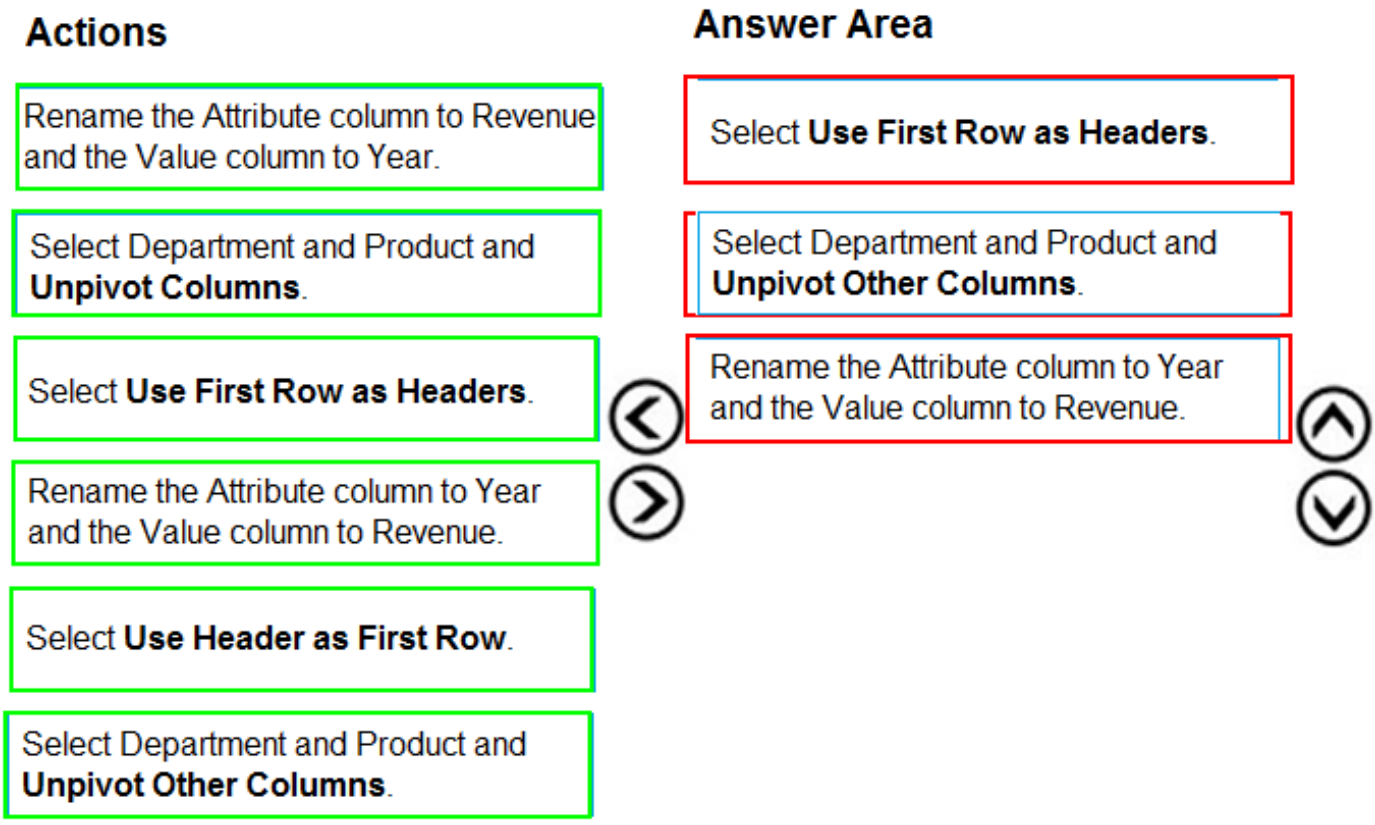
You plan to create several visuals from the data, including a visual that shows revenue split by year and product.

You need to transform the data to ensure that you can build the visuals. The solution must ensure that the columns are named appropriately for the data that they contain.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Answer:



Explanation:

Answer Area

Select **Use First Row as Headers**.

Select Department and Product and **Unpivot Other Columns**.

Rename the Attribute column to Year and the Value column to Revenue.

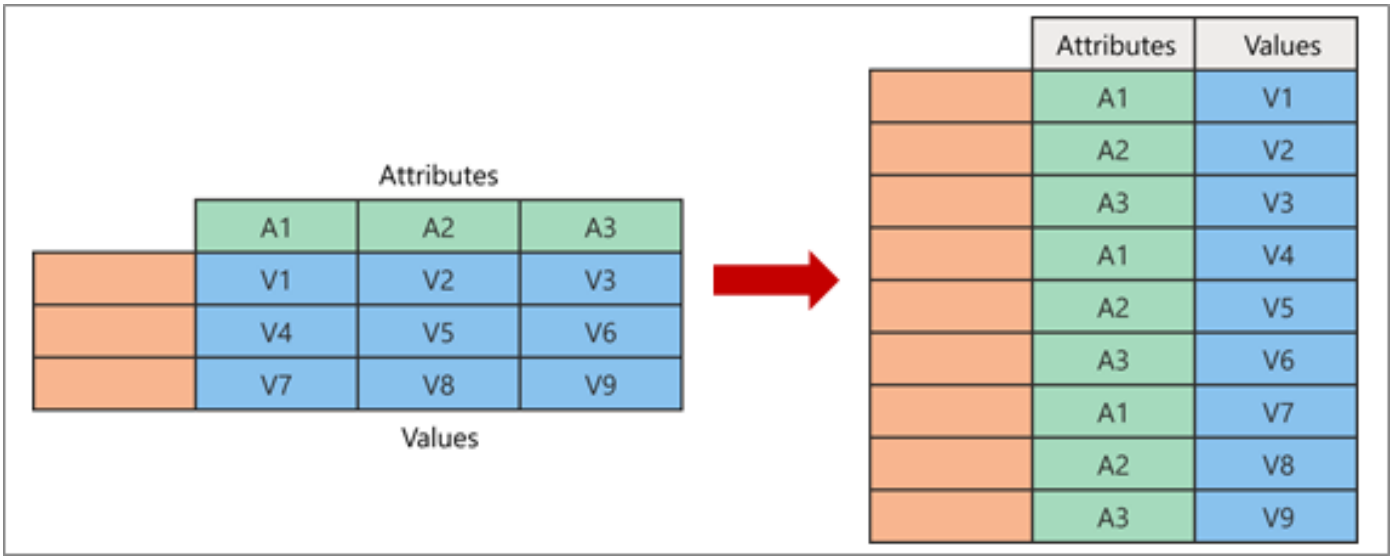
Step 1: Select Use Header as First Row.

Step 2: Select Department and Product and Unpivot Other Columns

Unpivot Other Columns: This command unpivots unselected columns. Use this command in a query when not all columns are known. New columns added during a refresh operation are also unpivoted.

Step 3: Rename the Attribute column to Year and the Value column to Revenue.

You might want to unpivot data, sometimes called flattening the data, to put it in a matrix format so that all similar values are in one column. This is necessary, for example, to create a chart or a report.



When you unpivot, you unpack the attribute-value pairs that represent an intersection point of the new columns and re-orient them into flattened columns:

Values (in blue on the left) are unpivoted into a new column (in blue on the right).

Attributes (in green on the left) are unpivoted into a new column (in green on the right) and duplicates are correspondingly mapped to the new Values column.

Reference:

https://support.microsoft.com/en-us/office/unpivot-columns-power-query-0f7bad4b-9ea1-49c1-9d95-f588221c7098

QUESTION NO: 35 HOTSPOT

You are building a financial report by using Power BI.

You have a table named financials that contains a column named Date and a column named Sales.

You need to create a measure that calculates the relative change in sales as compared to the previous quarter.

How should you complete the measure? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
Sales QoQ% =

IF (

     ISFILTERED('financials' [Date]),
     ERROR("Uh oh."),
     VAR PREV_QUARTER =
          [ CALCULATE | CALCULATETABLE | DATEADD | DIVIDE | FILTER | FIND ]
               SUM('financials'[Sales]),
               [ CALCULATE | CALCULATETABLE | DATEADD | DIVIDE | FILTER | FIND ]('financials'[Date].[Date], -1, QUARTER)
       )
 RETURN
       [ CALCULATE | CALCULATETABLE | DATEADD | DIVIDE | FILTER | FIND ](SUM('financials' [Sales]) - PREV_QUARTER, PREV_QUARTER)
)
```

Answer:

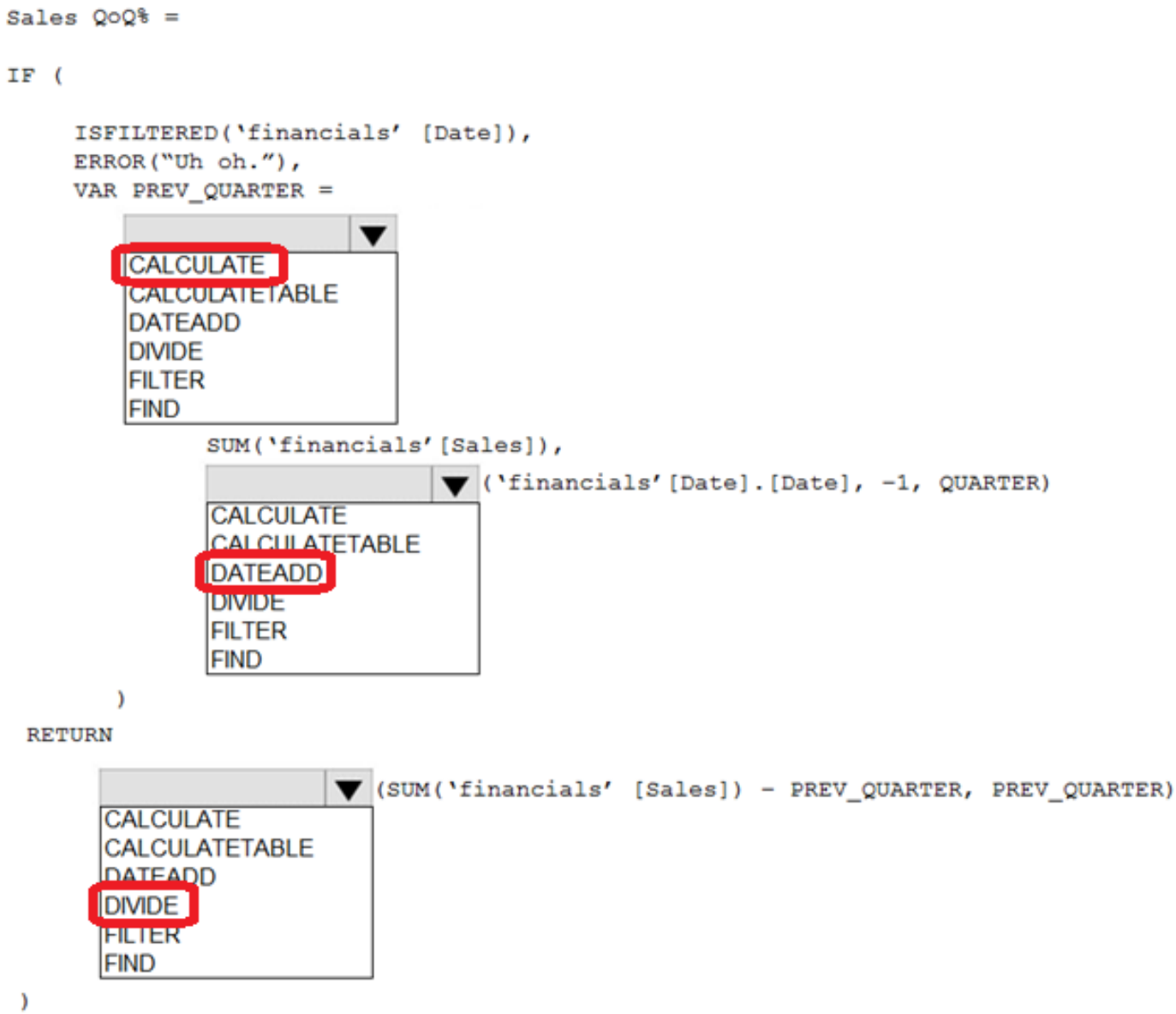
Answer Area

```
Sales QoQ% =

IF (

     ISFILTERED('financials' [Date]),
     ERROR("Uh oh."),
     VAR PREV_QUARTER =
          [CALCULATE ▼]
          SUM('financials'[Sales]),
               [DATEADD ▼]('financials'[Date].[Date], -1, QUARTER)
        )
  RETURN
        [DIVIDE ▼](SUM('financials' [Sales]) - PREV_QUARTER, PREV_QUARTER)
)
```

CALCULATE, CALCULATETABLE, DATEADD, DIVIDE, FILTER, FIND

Explanation:

Answer Area



Box 1: CALCULATE

Box 2: DATEADD

Box 3: DIVIDE

Example:

NET_SALES QoQ% =

IF(

ISFILTERED('Calendar'[Date]),

ERROR("Time intelligence quick measures can only be grouped or filtered by the Power BI-provided date hierarchy or primary date column."),

```
VAR __PREV_QUARTER =

CALCULATE(

SUM('research ra_qtr_template'[NET_SALES]),

DATEADD('Calendar'[Date].[Date], -1, QUARTER)

)

RETURN

DIVIDE(

SUM('research ra_qtr_template'[NET_SALES]) - __PREV_QUARTER,

__PREV_QUARTER

)

)
```

Reference:

https://community.powerbi.com/t5/Desktop/Error-calculating-QOQ-using-quick-measure/m-p/547054

QUESTION NO: 36

You have a custom connector that returns ID, From, To, Subject, Body, and Has Attachments for every email sent during the past year. More than 10 million records are returned.

You build a report analyzing the internal networks of employees based on whom they send emails to.

You need to prevent report recipients from reading the analyzed emails. The solution must minimize the model size.

What should you do?

A.
Implement row-level security (RLS) so that the report recipients can only see results based on the emails they sent.

B.
Remove the Subject and Body columns during the import.

C.
From Model view, set the Subject and Body columns to **Hidden**.

Answer: B
Explanation:

QUESTION NO: 37

Your company has training videos that are published to YouTube.

You need to surface the videos directly in a Microsoft Power BI dashboard.

Which type of tile should you add?

A.
video

B.
custom streaming data

C.
text box

D.
web content

Answer: B
Explanation:

The only way to visualize a streaming dataset is to add a tile and use the streaming dataset as a custom streaming data source.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/service-real-time-streaming

QUESTION NO: 38

You have a CSV file that contains user complaints. The file contains a column named Logged. Logged contains the date and time each complaint occurred. The data in Logged is in the following format: 2018-12-31 at 08:59.

You need to be able to analyze the complaints by the logged date and use a built-in date hierarchy.

What should you do?

A.
Create a column by example that starts with 2018-12-31.

B.
Add a conditional column that outputs 2018 if the Logged column starts with 2018 and set the data type of the new column to **Whole Number**.

C.
Create a column by example that starts with 2018-12-31 and set the data type of the new column to **Date**.

D.
Change the data type of the Logged column to **Date**.

Answer: C
Explanation:

You must set data type after creating a column by example as Power BI will not automatically detect the data type as "date".

Reference:

https://docs.microsoft.com/en-us/powerquery-m/text-start

Topic 2, Model the Data

QUESTION NO: 39

Case Study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all question included on this exam in the time provided.

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At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question on this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information tab**, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Overview

Litware, Inc. is an online retailer that uses Microsoft Power BI dashboards and reports.

The company plans to leverage data from Microsoft SQL Server databases, Microsoft Excel files, text files, and several other data sources.

Litware uses Azure Active Directory (Azure AD) to authenticate users.

Existing Environment

Sales Data

Litware has online sales data that has the SQL schema shown in the following table.

Table name	Column name	Data type
Sales_Region	region_id	Integer
	name	Varchar
Region_Manager	region_id	Integer
	manager_id	Integer
Sales_Manager	sales_manager_id	Integer
	name	Varchar
	username	Varchar
Sales	sales_id	Integer
	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
Weekly_Returns	week_id	Integer
	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
	region_id	Integer

In the Date table, the date_id column has a format of yyyymmdd and the month column has a format of yyyymm.

The week column in the Date table and the week_id column in the Weekly_Returns table have a format of yyyyww.

The sales_id column in the Sales table represents a unique transaction.

The region_id column can be managed by only one sales manager.

Data Concerns

You are concerned with the quality and completeness of the sales data. You plan to verify the sales data for negative sales amounts.

Reporting Requirements

Litware identifies the following technical requirements:

- Executives require a visual that shows sales by region.
- Regional managers require a visual to analyze weekly sales and returns.
- Sales managers must be able to see the sales data of their respective region only.
- The sales managers require a visual to analyze sales performance versus sales targets.
- The sale department requires reports that contain the number of sales transactions.
- Users must be able to see the month in reports as shown in the following example: Feb 2020.
- The customer service department requires a visual that can be filtered by both sales month and ship month independently.

You need to create the required relationship for the executive's visual.

What should you do before you can create the relationship?

A.
Change the data type of Sales[region_id] to **Whole Number**.

B.
Change the data type of Sales[region_id] to **Decimal Number**.

C.
Change the data type of Sales[sales_id] to **Text**.

D.
In the Sales table, add a measure for Sum(sales_amount).

Answer: A
Explanation:

Scenario: Executives require a visual that shows sales by region.

Need to change the sales_id column from Varchar to Whole Number (Integer).

QUESTION NO: 40

Case Study

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	manager_id	Integer
Sales_Manager	sales_manager_id	Integer
	name	Varchar
	username	Varchar
Sales	sales_id	Integer
	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
Weekly_Returns	week_id	Integer
	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
	region_id	Integer

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The sales managers require a visual to analyze sales performance versus sales targets.

The sale department requires reports that contain the number of sales transactions.

Users must be able to see the month in reports as shown in the following example: Feb 2020.

The customer service department requires a visual that can be filtered by both sales month and ship month independently.

What should you create to meet the reporting requirements of the sales department?

A.
a measure that uses a formula of SUM(Sales[sales_id])

B.
a calculated column that use a formula of COUNTA(Sales[sales_id])

C.
a measure that uses a formula of COUNTROWS(Sales)

D.
a calculated column that uses a formula of SUM(Sales[sales_id])

Answer: C
Explanation:

The sale department requires reports that contain the number of sales transactions.

The COUNTROWS function counts the number of rows in the specified table, or in a table defined by an expression.

Reference:

https://docs.microsoft.com/en-us/dax/countrows-function-dax

QUESTION NO: 41

Case Study

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Overview

Litware, Inc. is an online retailer that uses Microsoft Power BI dashboards and reports.

The company plans to leverage data from Microsoft SQL Server databases, Microsoft Excel files, text files, and several other data sources.

Litware uses Azure Active Directory (Azure AD) to authenticate users.

Existing Environment

Sales Data

Litware has online sales data that has the SQL schema shown in the following table.

Table name	Column name	Data type
Sales_Region	region_id	Integer
	name	Varchar
Region_Manager	region_id	Integer
	manager_id	Integer
Sales_Manager	sales_manager_id	Integer
	name	Varchar
	username	Varchar
Sales	sales_id	Integer
	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
Weekly_Returns	week_id	Integer
	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
	region_id	Integer

In the Date table, the date_id column has a format of yyyymmdd and the month column has a format of yyyymm.

The week column in the Date table and the week_id column in the Weekly_Returns table have a format of yyyyww.

The sales_id column in the Sales table represents a unique transaction.

The region_id column can be managed by only one sales manager.

Data Concerns

You are concerned with the quality and completeness of the sales data. You plan to verify the sales data for negative sales amounts.

Reporting Requirements

Litware identifies the following technical requirements:

- Executives require a visual that shows sales by region.
- Regional managers require a visual to analyze weekly sales and returns.
- Sales managers must be able to see the sales data of their respective region only.
- The sales managers require a visual to analyze sales performance versus sales targets.
- The sale department requires reports that contain the number of sales transactions.
- Users must be able to see the month in reports as shown in the following example: Feb 2020.
- The customer service department requires a visual that can be filtered by both sales month and ship month independently.

You need to provide a solution to provide the sales managers with the required access.

What should you include in the solution?

A.
Create a security role that has a table filter on the Sales_Manager table where

username = UserName().

B.
Create a security role that has a table filter on the Region_Manager table where

sales_manager_id = UserPrincipalName().

C.
Create a security role that has a table filter on the Sales_Manager table where

name = UserName().

D.
Create a security role that has a table filter on the Sales_Manager table where

username = sales_manager_id.

Answer: A

Explanation:

Scenario: The region_id column can be managed by only one sales manager.

You can use Username() or userprincipalname() in DAX with Row-Level Security.

Within Power BI Desktop, username() will return a user in the format of DOMAIN\User and userprincipalname() will return a user in the format of user@contoso.com.

Reference:

https://docs.microsoft.com/en-us/power-bi/admin/service-admin-rls

https://powerbi.microsoft.com/en-us/blog/using-username-in-dax-with-row-level-security/

QUESTION NO: 42

Case Study

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	username	Varchar
Sales	sales_id	Integer
	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
Weekly_Returns	week_id	Integer
	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
	region_id	Integer

In the Date table, the date_id column has a format of yyyymmdd and the month column has a format of yyyymm.

The week column in the Date table and the week_id column in the Weekly_Returns table have a format of yyyyww.

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- The sale department requires reports that contain the number of sales transactions.
- Users must be able to see the month in reports as shown in the following example: Feb 2020.
- The customer service department requires a visual that can be filtered by both sales month and ship month independently.

You need to create a relationship between the Weekly_Returns table and the Date table to meet the reporting requirements of the regional managers.

What should you do?

A.
Add the Weekly_Returns data to the Sales table by using RELATED DAX functions.

B.

In the Weekly_Returns table, create a new calculated column named date_id in a format of yyyymmdd and use the calculated column to create a relationship to the Date table.

C.
Create a new table based on the Date table where date_id is unique, and then create a many-to-many relationship to Weekly_Return.

Answer: B
Explanation:

Scenario: Regional managers require a visual to analyze weekly sales and returns.

To relate the two tables we need a common column.

QUESTION NO: 43

Case Study

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Sales	sales_id	Integer
	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
Weekly_Returns	week_id	Integer
	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
	region_id	Integer

In the Date table, the date_id column has a format of yyyymmdd and the month column has a format of yyyymm.

The week column in the Date table and the week_id column in the Weekly_Returns table have a format of yyyyww.

The sales_id column in the Sales table represents a unique transaction.

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Litware identifies the following technical requirements:

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- Regional managers require a visual to analyze weekly sales and returns.
- Sales managers must be able to see the sales data of their respective region only.
- The sales managers require a visual to analyze sales performance versus sales targets.
- The sale department requires reports that contain the number of sales transactions.
- Users must be able to see the month in reports as shown in the following example: Feb 2020.
- The customer service department requires a visual that can be filtered by both sales month and ship month independently.

You need to create relationships to meet the reporting requirements of the customer service department.

What should you create?

A.
an additional date table named ShipDate, a one-to-many relationship from Date[date_id] to Sales[Sales_date_id], and a one-to-many relationship from ShipDate[date_id] to Sales[sales_ship_date_id]

B.
an additional date table named ShipDate, a many-to-many relationship from Sales[sales_date_id] to Date[date_id], and a many-to-many relationship from Sales[sales_ship_date_id] to ShipDate[date_id]

C.
a one-to-many relationship from Date[date_id] to Sales[sales_date_id] and another one-to-many relationship from Date[date_id] to Weekly_Returns[week_id]

D.
a one-to-many relationship from Sales[sales_date_id] to Date[date_id] and a one-to-many relationship from Sales[sales_ship_date_id] to Date[date_id]

Answer: A
Explanation:

Scenario: The customer service department requires a visual that can be filtered by both sales month and ship month independently.

In Power BI Desktop, only one relationship can be active between a Fact table and Dimension table, so we need an extra table.

Use one-to-many relationship to be able to filter.

Reference:

https://docs.microsoft.com/en-us/power-bi/transform-model/desktop-relationships-understand

QUESTION NO: 44 DRAG DROP

Case Study

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Overview

Contoso, Ltd. is a manufacturing company that produces outdoor equipment. Contoso has quarterly board meetings for which financial analysts manually prepare Microsoft Excel reports, including profit and loss statements for each of the company's four business units, a company balance sheet, and net income projections for the next quarter.

Existing Environment

Data and Sources

Data for the reports comes from three sources. Detailed revenue, cost, and expense data comes from an Azure SQL database. Summary balance sheet data comes from Microsoft Dynamics 365 Business Central. The balance sheet data is not related to the profit and loss results, other than they both relate to dates.

Monthly revenue and expense projections for the next quarter come from a Microsoft SharePoint Online list. Quarterly projections relate to the profit and loss results by using the following shared dimensions: date, business unit, department, and product category.

Net Income Projection Data

Net income projection data is stored in a SharePoint Online list named Projections in the format shown in the following table.

MonthStartDate	Projection type	ProductCategory	Department	Projection
1-Apr-20	Revenue	Bikes	N/A	200,000
1-Apr-20	Revenue	Components	N/A	250,000
1-Apr-20	Revenue	Clothing	N/A	300,000
1-Apr-20	Revenue	Accessories	N/A	150,000
1-May-20	Revenue	Bikes	N/A	200,000
1-May-20	Revenue	Components	N/A	250,000
1-Apr-20	Expense	Bikes	Bike Manufacture	50,000
1-Apr-20	Expense	Bikes	Bike Sales	3,333

Revenue projections are set at the monthly level and summed to show projections for the quarter.

Balance Sheet Data

The balance sheet data is imported with final balances for each account per month in the format shown in the following table.

AccountCategory	Account	Month	Year	BalanceAmount
Current assets	Cash and cash equivalents	3	2020	20,289
Current assets	Inventories	3	2020	4,855
Long-term liabilities	Long-term debt	3	2020	50,207
Current assets	Cash and cash equivalents	2	2020	28,209
Current assets	Inventories	2	2020	5,845
Long-tern liabilities	Long-tern debt	2	2020	49,887
Current assets	Cash and cash equivalents	1	2020	25,567
Current assets	Inventories	1	2020	65,998
Long-term liabilities	Long-term debt	1	2020	46,124

There is always a row for each account for each month in the balance sheet data.

Dynamics 365 Business Central Data

Business Central contains a product catalog that shows how products roll up to product categories, which roll up to business units.

Revenue data is provided at the date and product level. Expense data is provided at the date and

department level.

Business Issues

Historically, it has taken two analysts a week to prepare the reports for the quarterly board meetings. Also, there is usually at least one issue each quarter where a value in a report is wrong because of a bad cell reference in an Excel formula. On occasion, there are conflicting results in the reports because the products and departments that roll up to each business unit are not defined consistently.

Requirements

Planned Changes

Contoso plans to automate and standardize the quarterly reporting process by using Microsoft Power BI. The company wants to how long it takes to populate reports to less than two days. The company wants to create common logic for business units, products, and departments to be used across all reports, including, but not limited, to the quarterly reporting for the board.

Technical Requirements

Contoso wants the reports and datasets refreshed with minimal manual effort.

The company wants to provide a single package of reports to the board that contains custom navigation and links to supplementary information.

Maintenance, including manually updating data and access, must be minimized as much as possible.

Security Requirements

The reports must be made available to the board from powerbi.com. An Azure Active Directory group will be used to share information with the board.

The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

Name	Data type	Example
Date	Date	4-Apr-2020
Month	Integer	20,2004
Month Name	Text	February
Quarter	Integer	20,202
Year	Integer	2,020

The definitions and attributes of products, departments, and business units must be consistent across all reports.

The board must be able to get the following information from the quarterly reports:

Revenue trends over time

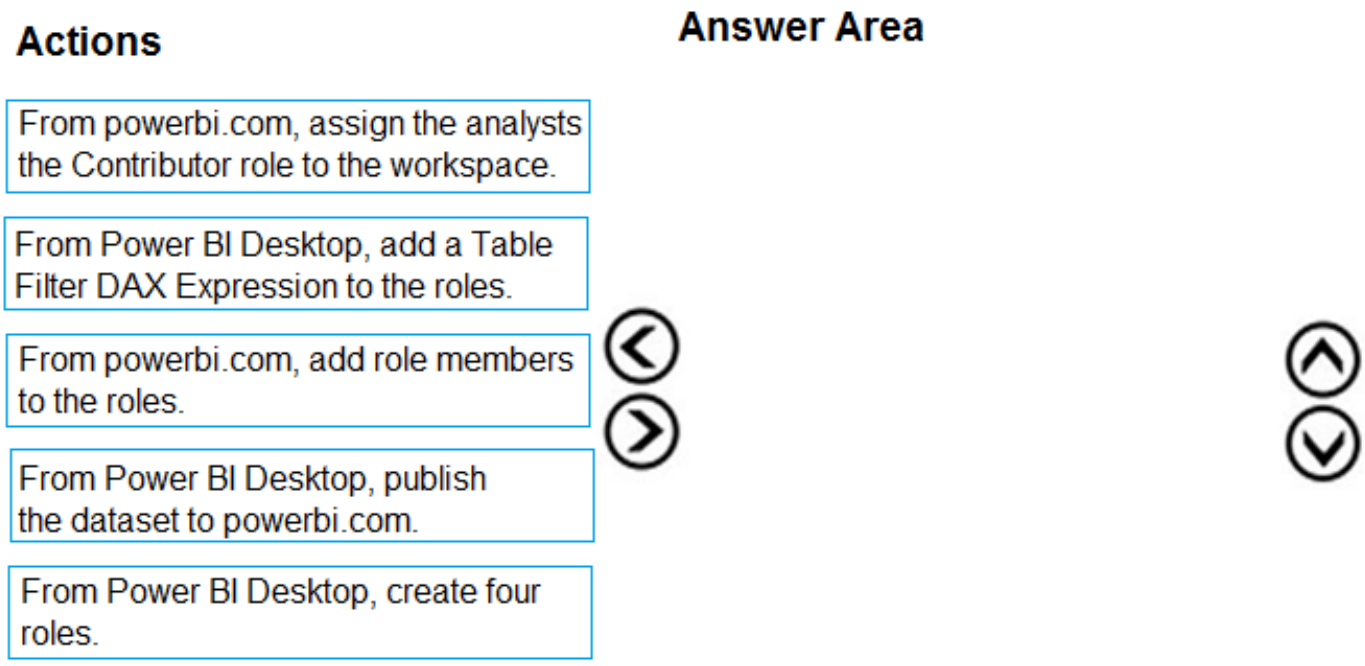
Ending balances for each account

A comparison of expenses versus projections by quarter

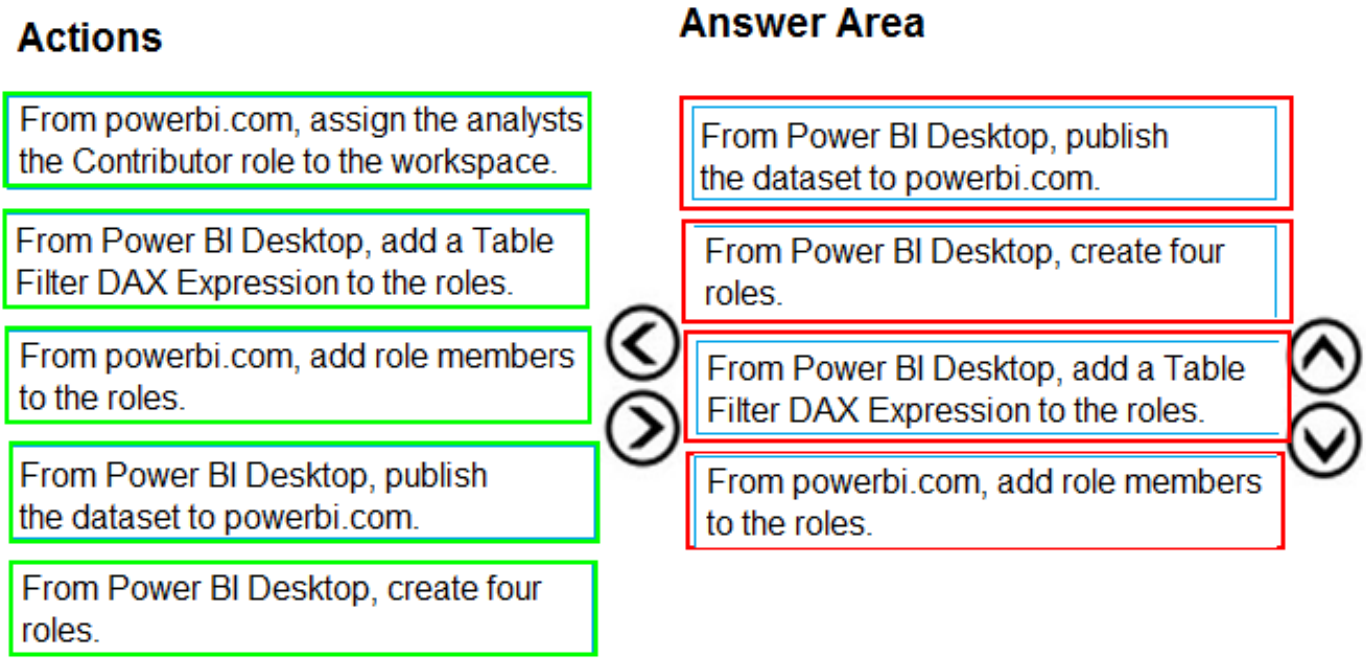
Changes in long-term liabilities from the previous quarter

A comparison of quarterly revenue versus the same quarter during the prior year

Once the profit and loss dataset is created, which four actions should you perform in sequence to ensure that the business unit analysts see the appropriate profit and loss data? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

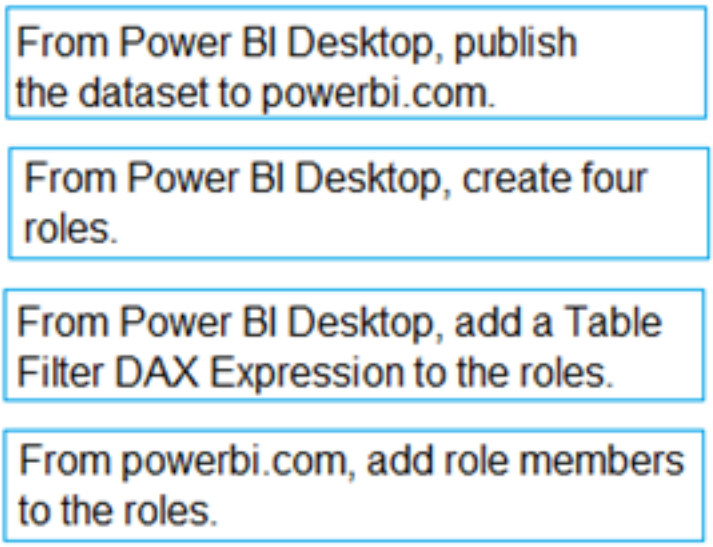


Answer:



Explanation:

Answer Area



Scenario: The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Define roles and rules in Power BI Desktop

You can define roles and rules within Power BI Desktop. When you publish to Power BI, it also publishes the role definitions.

To define security roles, follow these steps.

Step 4: From powerbi.com, add role members to the roles.

You can't assign users to a role within Power BI Desktop. You assign them in the Power BI service.

Reference:

https://docs.microsoft.com/en-us/power-bi/admin/service-admin-rls

QUESTION NO: 45

Case Study

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Current assets	Inventories	2	2020	5,845
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Current assets	Inventories	1	2020	65,998
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The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports

that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

Name	Data type	Example
Date	Date	4-Apr-2020
Month	Integer	20,2004
Month Name	Text	February
Quarter	Integer	20,202
Year	Integer	2,020

The definitions and attributes of products, departments, and business units must be consistent across all reports.

The board must be able to get the following information from the quarterly reports:

Revenue trends over time

Ending balances for each account

A comparison of expenses versus projections by quarter

Changes in long-term liabilities from the previous quarter

A comparison of quarterly revenue versus the same quarter during the prior year

Which DAX expression should you use to get the ending balances in the balance sheet reports?

A.
CALCULATE (

SUM(BalanceSheet [BalanceAmount]),

DATESQTD('Date'[Date])

)

B.
CALCULATE (

SUM(BalanceSheet [BalanceAmount]),

LASTDATE('Date'[Date])

)

C.
FIRSTNONBLANK ('Date' [Date]

SUM(BalanceSheet[BalanceAmount])

)

D.
CALCULATE (

MAX(BalanceSheet[BalanceAmount]),

LASTDATE('Date' [Date])

)

Answer: B
Explanation:

Scenario: At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Semi-additive calculations, such as balance at end of month, use LASTDATE Functions.

Reference:

https://docs.microsoft.com/en-us/learn/modules/create-measures-dax-power-bi/5-semi-additive-measures

QUESTION NO: 46 HOTSPOT

Case Study

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Overview

Contoso, Ltd. is a manufacturing company that produces outdoor equipment. Contoso has quarterly board meetings for which financial analysts manually prepare Microsoft Excel reports, including profit and loss statements for each of the company's four business units, a company balance sheet, and net income projections for the next quarter.

Existing Environment

Data and Sources

Data for the reports comes from three sources. Detailed revenue, cost, and expense data comes from an Azure SQL database. Summary balance sheet data comes from Microsoft Dynamics 365 Business Central. The balance sheet data is not related to the profit and loss results, other than they both relate to dates.

Monthly revenue and expense projections for the next quarter come from a Microsoft SharePoint Online list. Quarterly projections relate to the profit and loss results by using the following shared dimensions: date, business unit, department, and product category.

Net Income Projection Data

Net income projection data is stored in a SharePoint Online list named Projections in the format shown in the following table.

MonthStartDate	Projection type	ProductCategory	Department	Projection
1-Apr-20	Revenue	Bikes	N/A	200,000
1-Apr-20	Revenue	Components	N/A	250,000
1-Apr-20	Revenue	Clothing	N/A	300,000
1-Apr-20	Revenue	Accessories	N/A	150,000
1-May-20	Revenue	Bikes	N/A	200,000
1-May-20	Revenue	Components	N/A	250,000
1-Apr-20	Expense	Bikes	Bike Manufacture	50,000
1-Apr-20	Expense	Bikes	Bike Sales	3,333

Revenue projections are set at the monthly level and summed to show projections for the quarter.

Balance Sheet Data

The balance sheet data is imported with final balances for each account per month in the format shown in the following table.

AccountCategory	Account	Month	Year	BalanceAmount
Current assets	Cash and cash equivalents	3	2020	20,289
Current assets	Inventories	3	2020	4,855
Long-term liabilities	Long-term debt	3	2020	50,207
Current assets	Cash and cash equivalents	2	2020	28,209
Current assets	Inventories	2	2020	5,845
Long-tern liabilities	Long-tern debt	2	2020	49,887
Current assets	Cash and cash equivalents	1	2020	25,567
Current assets	Inventories	1	2020	65,998
Long-term liabilities	Long-term debt	1	2020	46,124

There is always a row for each account for each month in the balance sheet data.

Dynamics 365 Business Central Data

Business Central contains a product catalog that shows how products roll up to product categories, which roll up to business units.

Revenue data is provided at the date and product level. Expense data is provided at the date and department level.

Business Issues

Historically, it has taken two analysts a week to prepare the reports for the quarterly board meetings. Also, there is usually at least one issue each quarter where a value in a report is wrong because of a bad cell reference in an Excel formula. On occasion, there are conflicting results in the reports because the products and departments that roll up to each business unit are not defined consistently.

Requirements

Planned Changes

Contoso plans to automate and standardize the quarterly reporting process by using Microsoft Power BI. The company wants to how long it takes to populate reports to less than two days. The company wants to create common logic for business units, products, and departments to be used across all reports, including, but not limited, to the quarterly reporting for the board.

Technical Requirements

Contoso wants the reports and datasets refreshed with minimal manual effort.

The company wants to provide a single package of reports to the board that contains custom navigation and links to supplementary information.

Maintenance, including manually updating data and access, must be minimized as much as possible.

Security Requirements

The reports must be made available to the board from powerbi.com. An Azure Active Directory group will be used to share information with the board.

The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports

that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

Name	Data type	Example
Date	Date	4-Apr-2020
Month	Integer	20,2004
Month Name	Text	February
Quarter	Integer	20,202
Year	Integer	2,020

The definitions and attributes of products, departments, and business units must be consistent across all reports.

The board must be able to get the following information from the quarterly reports:

Revenue trends over time

Ending balances for each account

A comparison of expenses versus projections by quarter

Changes in long-term liabilities from the previous quarter

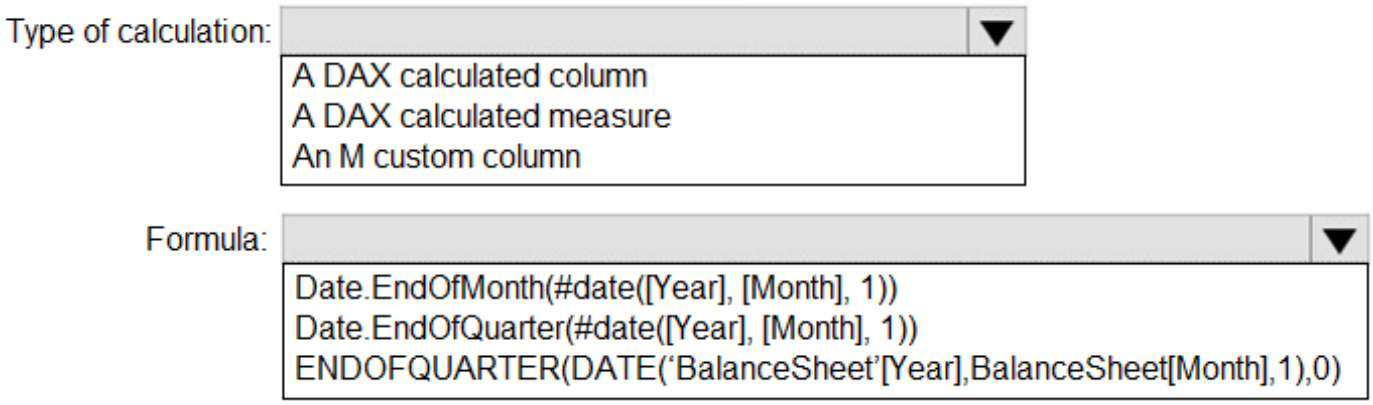
A comparison of quarterly revenue versus the same quarter during the prior year

You need to calculate the last day of the month in the balance sheet data to ensure that you can relate the balance sheet data to the Date table.

Which type of calculation and which formula should you use? To answer, select the appropriate options in the answer area.

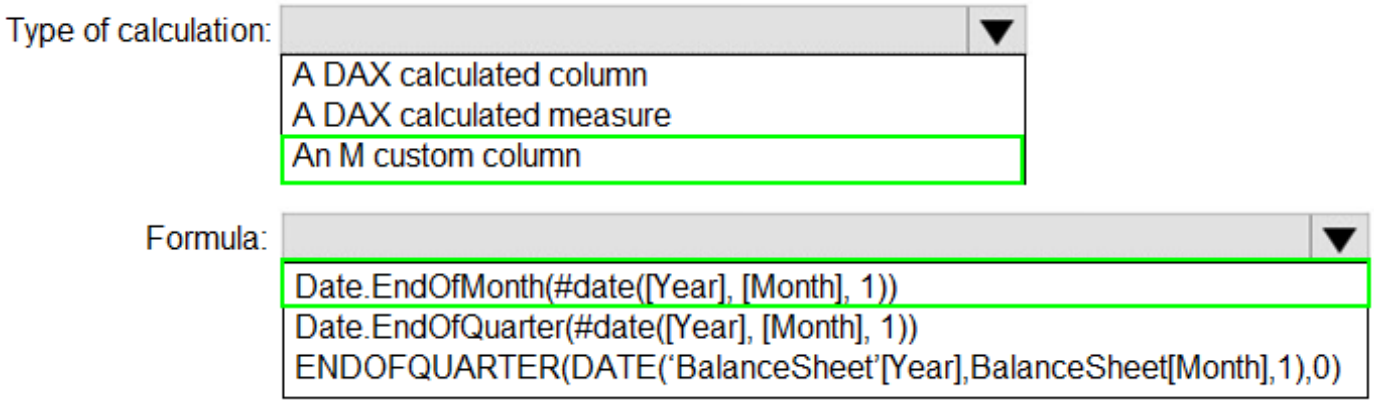
NOTE: Each correct selection is worth one point.

Answer Area



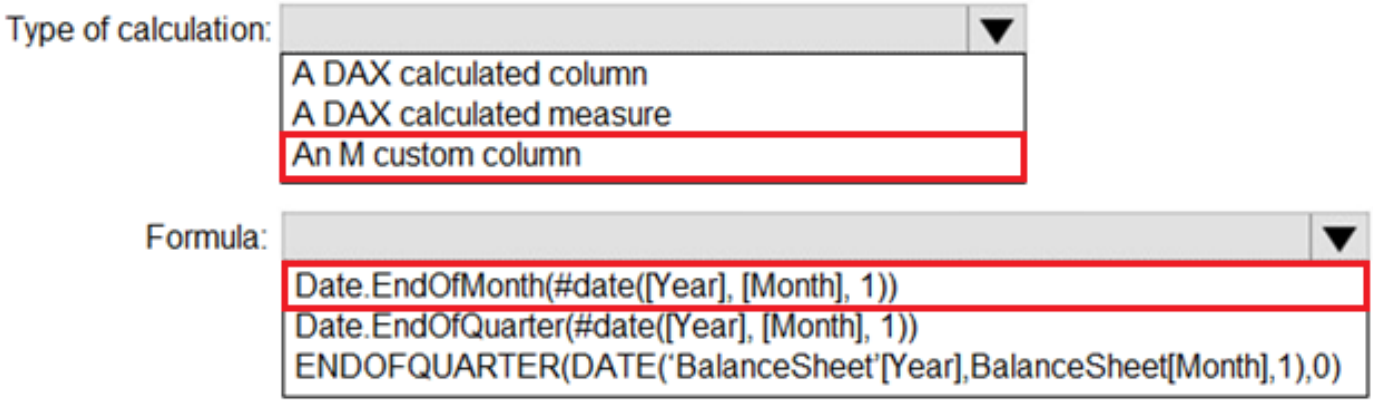
Answer:

Answer Area



Explanation:

Answer Area



Box 1: An M custom column

Box 2: Date.EndOfMonth(#date([Year],[Month],1))

Reference:

https://docs.microsoft.com/en-us/powerquery-m/date-endofmonth

QUESTION NO: 47 HOTSPOT

Case study

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Overview. General Overview

Northwind Traders is a specialty food import company.

The company recently implemented Power BI to better understand its top customers, products, and suppliers.

Overview. Business Issues

The sales department relies on the IT department to generate reports in Microsoft SQL Server Reporting Services (SSRS). The IT department takes too long to generate the reports and often misunderstands the report requirements.

Existing Environment. Data Sources

Northwind Traders uses the data sources shown in the following table.

Name	Type	Data size
Source1	Azure SQL database	2 GB
Source2	Microsoft Excel spreadsheet	5 MB

Source2 is exported daily from a third-party system and stored in Microsoft SharePoint Online.

Existing Environment. Customer Worksheet

Source2 contains a single worksheet named Customer Details. The first 11 rows of the worksheet are shown in the following table.

CustomerID	CustomerCRMID	CompanyName	Address	City	Region	PostalCode	Country	Phone
1	ALFKI	Alfreds Futterkiste	Obere Str. 57	Berlin	DE	12209	Germany	030-0074321
2	ANATR	Ana Trujillo Emparedados y helados	Avda. de la Constitución 2222	México D.F.	MX	5021	Mexico	(5) 555-4729
3	ANTON	Antonio Moreno Taquería	Mataderos 2312	México D.F.	MX	5023	Mexico	(5) 555-3932
4	AROUT	Around the Horn	120 Hanover Sq.	London	UK	WA1 1DP	UK	(171) 555-7788
5	BERGS	Berglunds snabbköp	Berguvsvägen 8	Luleå	SWE	S-958 22	Sweden	0921-12 34 65
6	BLAUS	Blauer See Delikatessen	Forsterstr. 57	Mannheim	DE	68306	Germany	0621-08460
7	BLONP	Blondesddsi père et fils	24, place Kléber	Strasbourg	FRA	67000	France	88.60.15.31
8	BOLID	Bólido Comidas preparadas	C/ Araquil, 67	Madrid	SPN	28023	Spain	(91) 555 22 82
9	BONAP	Bon app'	12, rue des Bouchers	Marseille	FRA	13008	France	91.24.45.40
10	BOTTM	Bottom-Dollar Markets	23 Tsawassen Blvd.	Tsawassen	BC	T2F 8M4	Canada	(604) 555-4729

All the fields in Source2 are mandatory.

The Address column in Customer Details is the billing address, which can differ from the shipping address.

Existing Environment. Azure SQL Database

Source1 contains the following table:

Orders

Products

Suppliers

Categories

Order Details

Sales Employees

The Orders table contains the following columns.

Name	Is nullable	Data type	Example value	Key
OrderID	No	Int	10248	Primary key
CustomerID	Yes	NCHAR	VINET	**Not applicable**
OrderDate	Yes	Date	2021-01-04	**Not applicable**
RequiredDate	Yes	Date	2021-02-01	**Not applicable**
ShippedDate	Yes	Date	2021-01-16	**Not applicable**
Freight	Yes	Decimal	32.38	**Not applicable**
ShipName	Yes	NVARCHAR	Vins et alcools Chevalier	**Not applicable**
ShipAddress	Yes	NVARCHAR	59 rue de l'Abbaye	**Not applicable**
ShipCity	Yes	NVARCHAR	Reims	**Not applicable**
ShipRegion	Yes	NVARCHAR	FRA	**Not applicable**
ShipPostalCode	Yes	NVARCHAR	511000	**Not applicable**
ShipCountry	Yes	NVARCHAR	France	**Not applicable**

The Order Details table contains the following columns.

Name	Is nullable	Data type	Example value	Key
OrderID	No	Int	10248	Foreign key to Orders
ProductID	No	Int	11	Foreign key to Products
UnitPrice	No	Decimal	14	**Not applicable**
Quantity	No	Smallint	12	**Not applicable**
Discount	No	Decimal	0.15	**Not applicable**

The address in the Orders table is the shipping address, which can differ from the billing address.

The Products table contains the following columns.

Name	Is nullable	Data type	Example value	Key
ProductID	No	Int	11	Primary key
ProductName	No	NVARCHAR	Queso Cabrales	**Not applicable**
SupplierID	Yes	Int	5	Foreign key to Suppliers
CategoryID	Yes	Int	4	Foreign key to Categories
QuantityPerUnit	Yes	NVARCHAR	1 kg pkg.	**Not applicable**
Discontinued	No	Bit	0	**Not applicable**

The Categories table contains the following columns.

Name	Is nullable	Data type	Example value	Key
CategoryID	No	int	4	Primary key
CategoryName	No	nvarchar	Dairy Products	**Not applicable**
Description	Yes	nvarchar	Cheeses	**Not applicable**

The Suppliers table contains the following columns.

Name	Is nullable	Data type	Example value	Key
SupplierID	No	Int	5	Primary key
CompanyName	No	NVARCHAR	Cooperativa de Quesos 'Las Cabras'	**Not applicable**
Address	Yes	NVARCHAR	Calle del Rosal 4	**Not applicable**
City	Yes	NVARCHAR	Oviedo	**Not applicable**
Region	Yes	NVARCHAR	Asturias	**Not applicable**
PostalCode	Yes	NVARCHAR	33007	**Not applicable**
Country	Yes	NVARCHAR	Spain	**Not applicable**
Phone	Yes	NVARCHAR	(98) 598 76 54	**Not applicable**

The Sales Employees table contains the following columns.

Name	Is nullable	Data type	Example value	Key
EmployeeID	No	Int	1	Primary key
LastName	No	NVARCHAR	Davolio	**Not applicable**
FirstName	No	NVARCHAR	Nancy	**Not applicable**
Title	Yes	NVARCHAR	Sales Representative	**Not applicable**
HireDate	Yes	Date	2015-02-01	**Not applicable**
Region	Yes	NVARCHAR	WA	**Not applicable**
Country	Yes	NVARCHAR	USA	**Not applicable**
EmailAddress	No	NVARCHAR	ndavolio@northwindtraders.com	**Not applicable**

Each employee in the Sales Employees table is assigned to one sales region. Multiple employees can be assigned to each region.

Requirements. Report Requirements

Northwind Traders requires the following reports:

Top Products

Top Customers

On-Time Shipping

The Top Customers report will show the top 20 customers based on the highest sales amounts in a selected order month or quarter, product category, and sales region.

The Top Products report will show the top 20 products based on the highest sales amounts sold in a selected order month or quarter, sales region, and product category. The report must also show which suppliers provide the top products.

The On-Time Shipping report will show the following metrics for a selected shipping month or quarter:

The percentage of orders that were shipped late by country and shipping region

Customers that had multiple late shipments during the last quarter

Northwind Traders defines late orders as those shipped after the required shipping date.

The warehouse shipping department must be notified if the percentage of late orders within the current month exceeds 5%.

The reports must show historical data for the current calendar year and the last three calendar years.

Requirements. Technical Requirements

Northwind Traders identifies the following technical requirements:

- A single dataset must support all three reports.
- The reports must be stored in a single Power BI workspace.
- Report data must be current as of 7 AM Pacific Time each day.
- The reports must provide fast response times when users interact with a visualization.
- The data model must minimize the size of the dataset as much as possible, while meeting the report requirements and the technical requirements.

Requirements. Security Requirements

Access to the reports must be granted to Azure Active Directory (Azure AD) security groups only. An Azure AD security group exists for each department.

The sales department must be able to perform the following tasks in Power BI:

- Create, edit, and delete content in the reports.
- Manage permissions for workspaces, datasets, and report.
- Publish, unpublish, update, and change the permissions for an app.
- Assign Azure AD groups role-based access to the reports workspace.

Users in the sales department must be able to access only the data of the sales region to which they are assigned in the Sales Employees table.

Power BI has the following row-level security (RLS) Table filter DAX expression for the Sales Employees table.

[EmailAddress] = USERNAME()

RLS will be applied only to the sales department users. Users in all other departments must be able to view all the data.

You need to create a measure that will return the percentage of late orders.

How should you complete the DAX expression? To answer, select the appropriate options in the answer area.

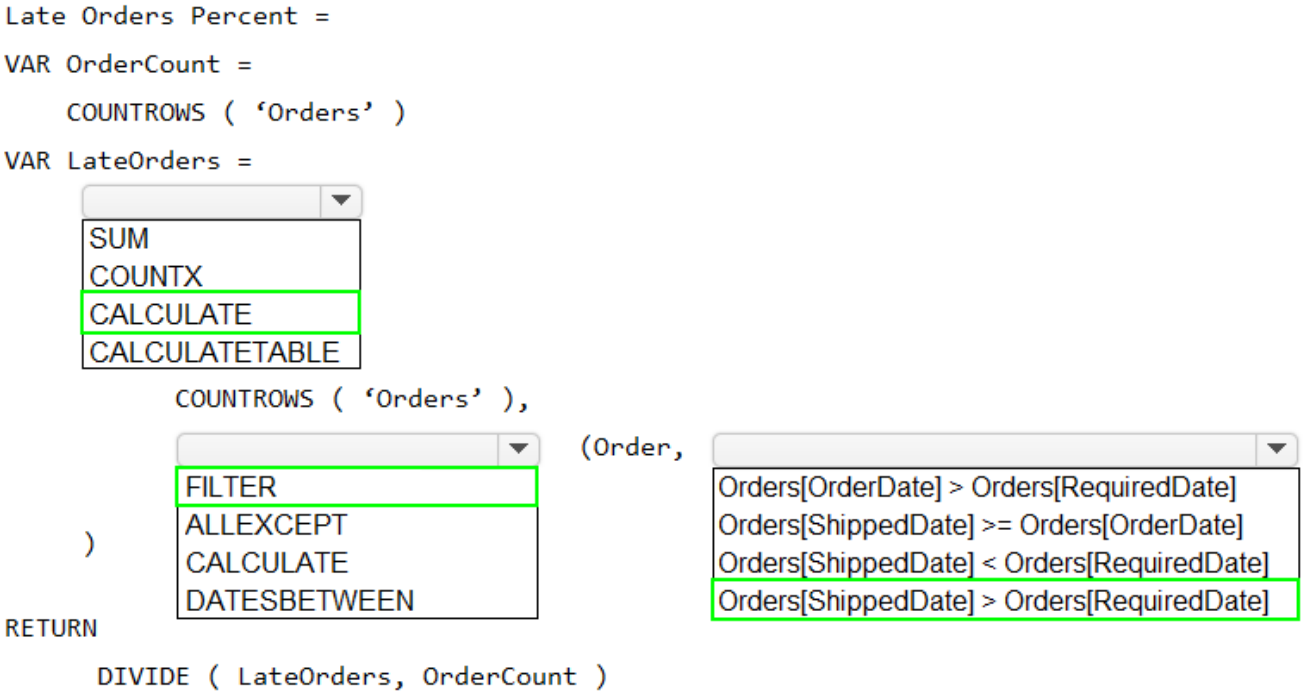
NOTE: Each correct selection is worth one point.

Answer Area

```
Late Orders Percent =
VAR OrderCount =
    COUNTROWS ( 'Orders' )
VAR LateOrders =
    [ SUM / COUNTX / CALCULATE / CALCULATETABLE ]
        COUNTROWS ( 'Orders' ),
        [ FILTER / ALLEXCEPT / CALCULATE / DATESBETWEEN ] (Order, [ Orders[OrderDate] > Orders[RequiredDate] / Orders[ShippedDate] >= Orders[OrderDate] / Orders[ShippedDate] < Orders[RequiredDate] / Orders[ShippedDate] > Orders[RequiredDate] ]
    )
RETURN
    DIVIDE ( LateOrders, OrderCount )
```

Answer:

Answer Area



Explanation:

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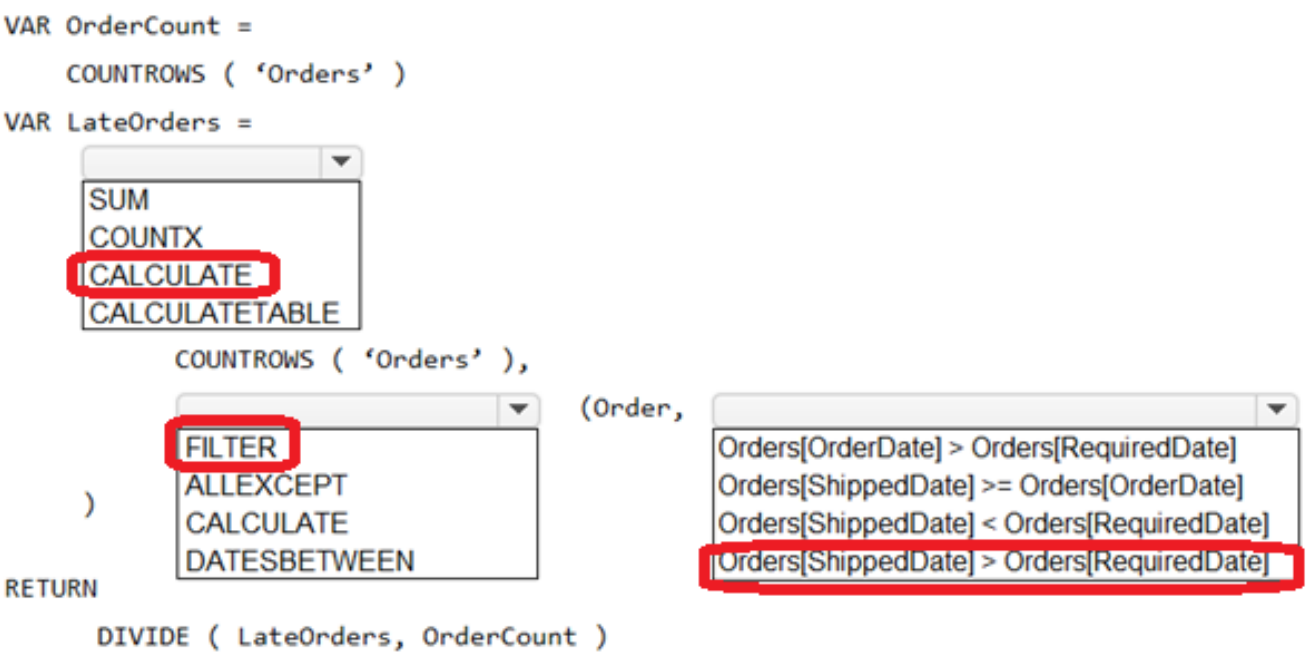

Box 1: CALCULATE

CALCULATE evaluates an expression in a modified filter context.

Syntax: CALCULATE(<expression>[, <filter1> [, <filter2> [, …]]])

Expression - The expression to be evaluated.

filter1, filter2,… (Optional) Boolean expressions or table expressions that defines filters, or filter modifier functions.

Box 2: FILTER

FILTER returns a table that represents a subset of another table or expression.

Syntax: FILTER(<table>,<filter>)

Table- The table to be filtered. The table can also be an expression that results in a table.

Filter - A Boolean expression that is to be evaluated for each row of the table. For example, [Amount] > 0 or [Region] = "France"

Box 3: Orders[ShippedDate]> Orders[RequiredDate]

Northwind Traders defines late orders as those shipped after the required shipping date.

Reference:

https://docs.microsoft.com/en-us/dax/calculate-function-dax

https://docs.microsoft.com/en-us/dax/filter-function-dax

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3	ANTON	Antonio Moreno Taquería	Mataderos 2312	México D.F.	MX	5023	Mexico	(5) 555-3932
4	AROUT	Around the Horn	120 Hanover Sq.	London	UK	WA1 1DP	UK	(171) 555-7788
5	BERGS	Berglunds snabbköp	Berguvsvägen 8	Luleå	SWE	S-958 22	Sweden	0921-12 34 65
6	BLAUS	Blauer See Delikatessen	Forsterstr. 57	Mannheim	DE	68306	Germany	0621-08460
7	BLONP	Blondesddsi père et fils	24, place Kléber	Strasbourg	FRA	67000	France	88.60.15.31
8	BOLID	Bólido Comidas preparadas	C/ Araquil, 67	Madrid	SPN	28023	Spain	(91) 555 22 82
9	BONAP	Bon app'	12, rue des Bouchers	Marseille	FRA	13008	France	91.24.45.40
10	BOTTM	Bottom-Dollar Markets	23 Tsawassen Blvd.	Tsawassen	BC	T2F 8M4	Canada	(604) 555-4729

All the fields in Source2 are mandatory.

The Address column in Customer Details is the billing address, which can differ from the shipping address.

Existing Environment. Azure SQL Database

Source1 contains the following table:

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Suppliers

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Order Details

Sales Employees

The Orders table contains the following columns.

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CustomerID	Yes	NCHAR	VINET	**Not applicable**
OrderDate	Yes	Date	2021-01-04	**Not applicable**
RequiredDate	Yes	Date	2021-02-01	**Not applicable**
ShippedDate	Yes	Date	2021-01-16	**Not applicable**
Freight	Yes	Decimal	32.38	**Not applicable**
ShipName	Yes	NVARCHAR	Vins et alcools Chevalier	**Not applicable**
ShipAddress	Yes	NVARCHAR	59 rue de l'Abbaye	**Not applicable**
ShipCity	Yes	NVARCHAR	Reims	**Not applicable**
ShipRegion	Yes	NVARCHAR	FRA	**Not applicable**
ShipPostalCode	Yes	NVARCHAR	511000	**Not applicable**
ShipCountry	Yes	NVARCHAR	France	**Not applicable**

The Order Details table contains the following columns.

Name	Is nullable	Data type	Example value	Key
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SupplierID	Yes	Int	5	Foreign key to Suppliers
CategoryID	Yes	Int	4	Foreign key to Categories
QuantityPerUnit	Yes	NVARCHAR	1 kg pkg.	**Not applicable**
Discontinued	No	Bit	0	**Not applicable**

The Categories table contains the following columns.

Name	Is nullable	Data type	Example value	Key
CategoryID	No	int	4	Primary key
CategoryName	No	nvarchar	Dairy Products	**Not applicable**
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FirstName	No	NVARCHAR	Nancy	**Not applicable**
Title	Yes	NVARCHAR	Sales Representative	**Not applicable**
HireDate	Yes	Date	2015-02-01	**Not applicable**
Region	Yes	NVARCHAR	WA	**Not applicable**
Country	Yes	NVARCHAR	USA	**Not applicable**
EmailAddress	No	NVARCHAR	ndavolio@northwindtraders.com	**Not applicable**

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The reports must show historical data for the current calendar year and the last three calendar years.

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Requirements. Security Requirements

Access to the reports must be granted to Azure Active Directory (Azure AD) security groups only. An Azure AD security group exists for each department.

The sales department must be able to perform the following tasks in Power BI:

- Create, edit, and delete content in the reports.
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- Assign Azure AD groups role-based access to the reports workspace.

Users in the sales department must be able to access only the data of the sales region to which they are assigned in the Sales Employees table.

Power BI has the following row-level security (RLS) Table filter DAX expression for the Sales Employees table.

[EmailAddress] = USERNAME()

RLS will be applied only to the sales department users. Users in all other departments must be able to view all the data.

You need to create a relationship in the dataset for RLS.

What should you do? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Create a [ ] relationship between the Sales Employees table and the [ ]

- one-to-one
- one-to-many
- many-to-one
- many-to-many

- Orders table
- Suppliers table
- Order Details table
- Customer Details worksheet

Answer:

Answer Area

Create a [one-to-one / one-to-many / **many-to-one** / many-to-many] relationship between the Sales Employees table and the [Orders table / **Suppliers table** / Order Details table / Customer Details worksheet]

Explanation:

Answer Area

Create a [one-to-one / one-to-many / **many-to-one** / many-to-many] relationship between the Sales Employees table and the [Orders table / **Suppliers table** / Order Details table / Customer Details worksheet]

Box 1: many-to-one

Each employee in the Sales Employees table is assigned to one sales region. Multiple employees

can be assigned to each region.

The Suppliers table has a Region column.

Box 2: Suppliers table

QUESTION NO: 49

You build a report to analyze customer transactions from a database that contains the tables shown in the following table.

Table name	Column name
Customer	CustomerID (primary key)
	Name
	State
	Email
Transaction	TransactionID (primary key)
	CustomerID (foreign key)
	Date
	Amount

You import the tables.

Which relationship should you use to link the tables?

A.
many-to-many between Customer and Transaction

B.
one-to-many from Transaction to Customer

C.
one-to-many from Customer to Transaction

D.
one-to-one between Customer and Transaction

Answer: C

Explanation:

Each customer can have many transactions.

For each transaction there is exactly one customer.

QUESTION NO: 50 HOTSPOT

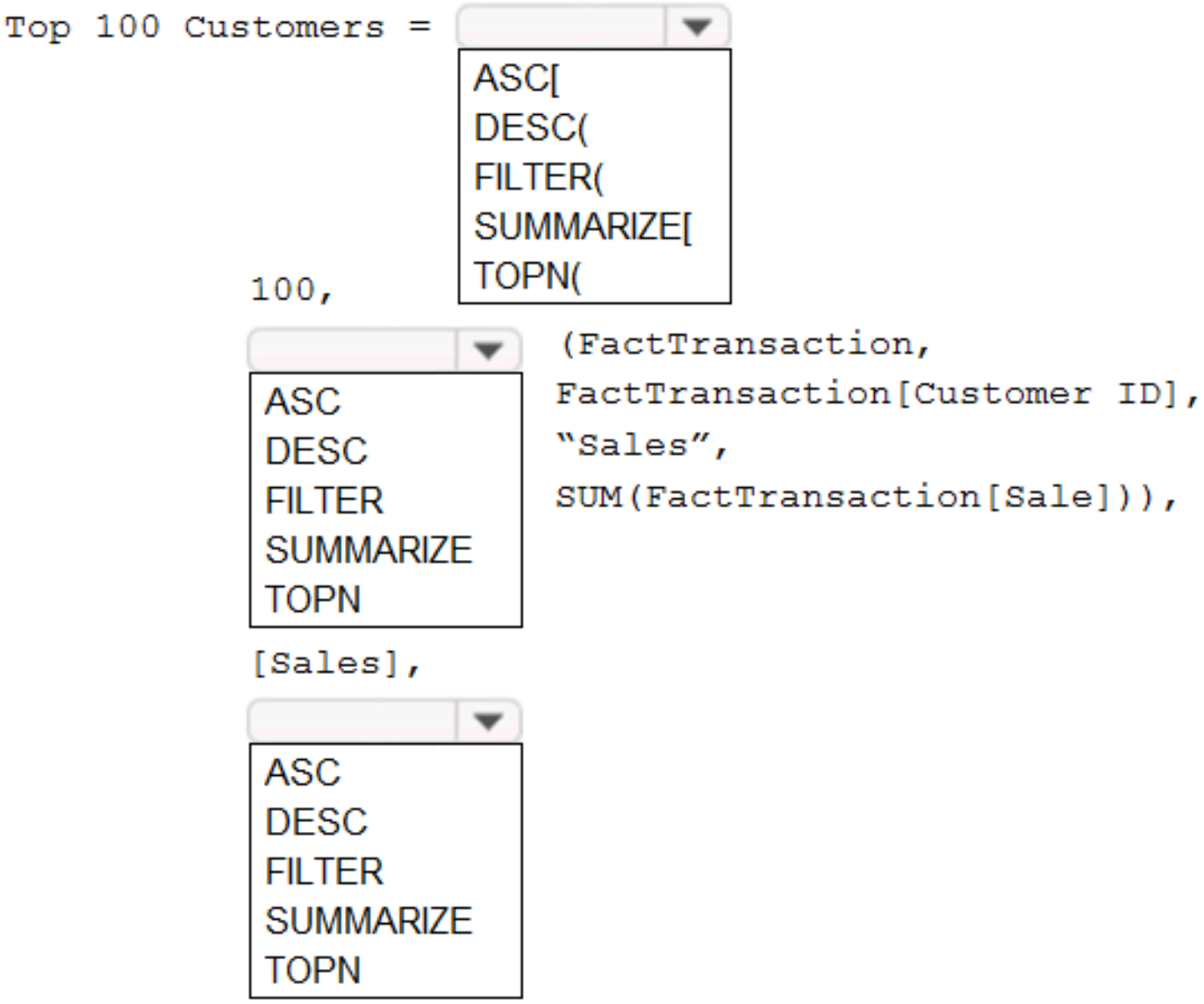
You have a Power BI report.

You need to create a calculated table to return the 100 highest spending customers.

How should you complete the DAX expression? To answer, select the appropriate options in the answer area.

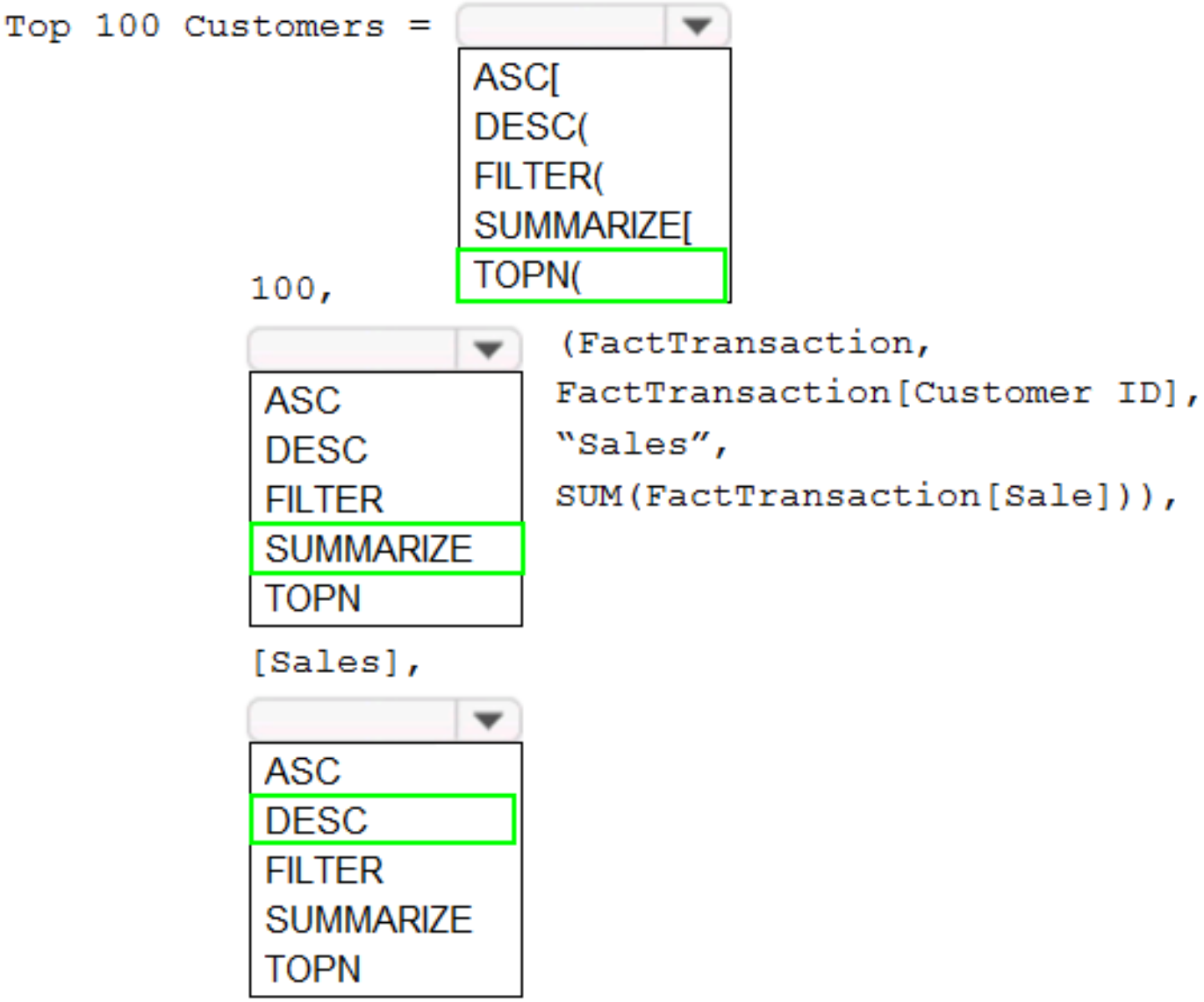
NOTE: Each correct selection is worth one point.

Answer Area



Answer:

Answer Area



Explanation:

Box 1: TOPN

TOPN returns the top N rows of the specified table.

Box 2: SUMMARIZE

SUMMARIZE returns a summary table for the requested totals over a set of groups.

Box 3: DESC

Sort in descending order.

It is last in the TOPN command.

TOPN syntax:

TOPN(<n_value>, <table>, <orderBy_expression>, [<order>[, <orderBy_expression>, [<order>]]…])

Reference:

https://docs.microsoft.com/en-us/dax/topn-function-dax

https://docs.microsoft.com/en-us/dax/summarize-function-dax

QUESTION NO: 51 HOTSPOT

You have two tables named Customers and Invoice in a Power BI model. The Customers table contains the following fields:

- CustomerID
- Customer City
- Customer State
- Customer Name
- Customer Address 1
- Customer Address 2
- Customer Postal Code

The Invoice table contains the following fields:

- Order ID
- Invoice ID
- Invoice Date
- Customer ID
- Total Amount

Total Item Count

The Customers table is related to the Invoice table through the Customer ID columns. A customer can have many invoices within one month.

The Power BI model must provide the following information:

The number of customers invoiced in each state last month

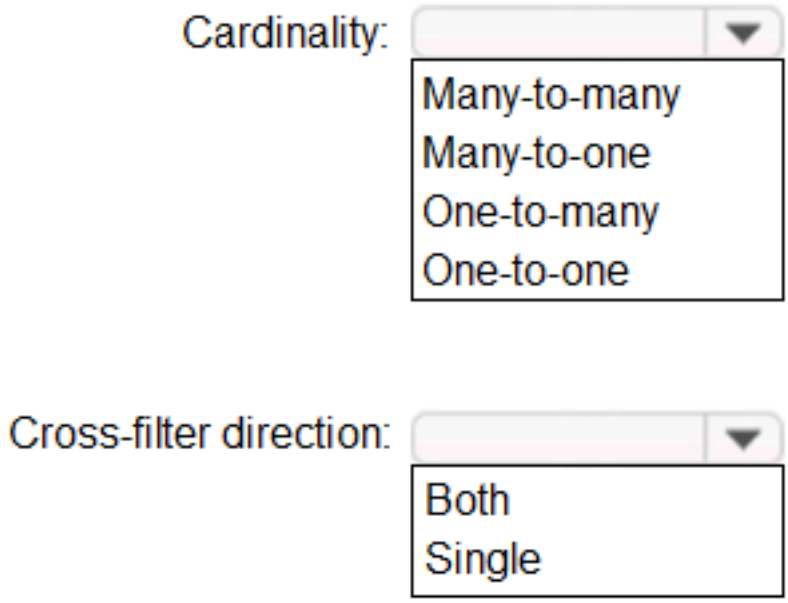
The average invoice amount per customer in each postal code

You need to define the relationship from the Customers table to the Invoice table. The solution must optimize query performance.

What should you configure? To answer, select the appropriate options in the answer area.

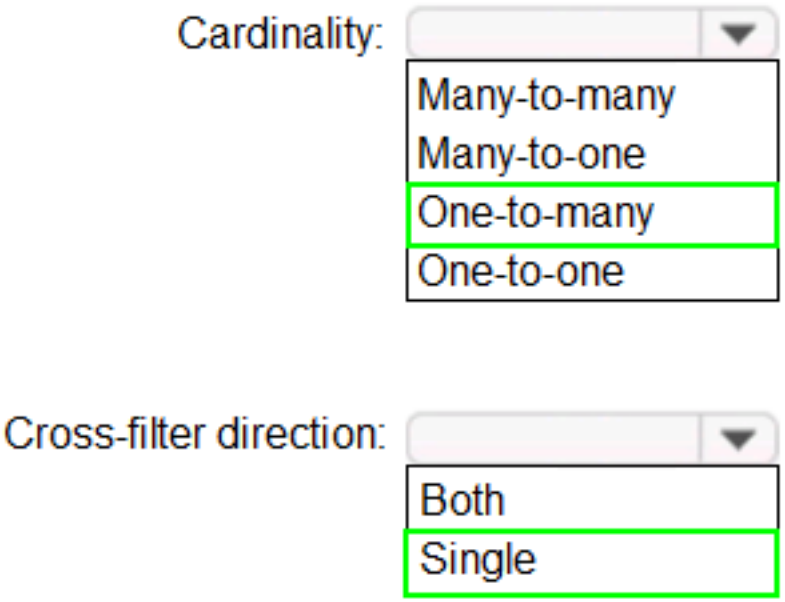
NOTE: Each correct selection is worth one point.

Answer Area



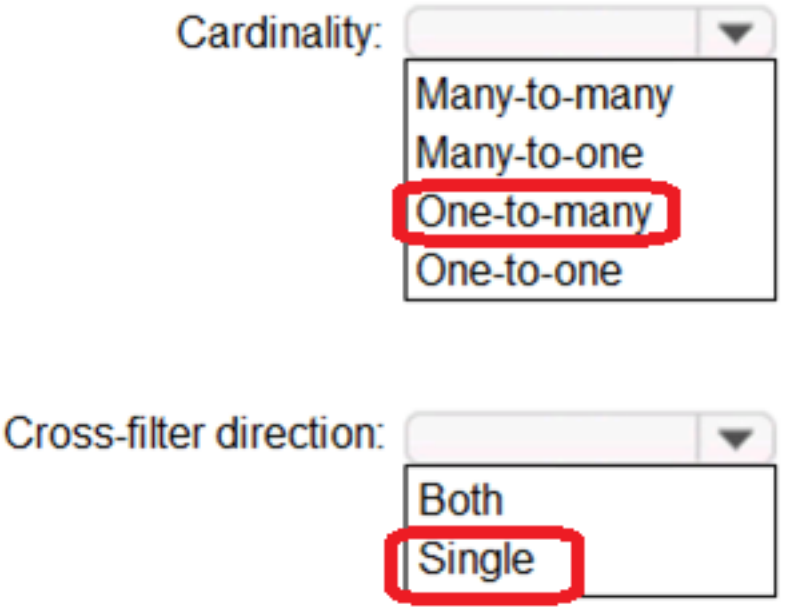
Answer:

Answer Area



Explanation:

Answer Area



Box 1: One-to-many

A customer can have many invoices within one month.

Box 2: Single

For One-to-many relationships, the cross filter direction is always from the "one" side, and optionally from the "many" side (bi-directional). For

Single cross filter direction means "single direction", and Both means "both directions". A relationship that filters in both directions is commonly described as bi-directional.

Reference:

https://docs.microsoft.com/en-us/power-bi/transform-model/desktop-relationships-understand

QUESTION NO: 52

You have a Microsoft Power BI data model that contains three tables named Orders, Date, and City. There is a one-to-many relationship between Date and Orders and between City and Orders.

The model contains two row-level security (RLS) roles named Role1 and Role2. Role1 contains the following filter.

City[State Province] = "Kentucky"

Role2 contains the following filter.

Date[Calendar Year] = 2020

If a user is a member of both Role1 and Role2, what data will they see in a report that uses the model?

A.
The user will see data for which the State Province value is Kentucky and the Calendar Year is 2020.

B.
The user will see data for which the State Province value is Kentucky or the Calendar Year is 2020.

C.
The user will see only data for which the State Province value is Kentucky.

D.

The user will receive an error and will not be able to see the data in the report.

Answer: B

Explanation:

When a report user is assigned to multiple roles, RLS filters become additive. It means report users can see table rows that represent the union of those filters.

Reference:

https://docs.microsoft.com/en-us/power-bi/guidance/rls-guidance

QUESTION NO: 53 HOTSPOT

Your company has affiliates who help the company acquire customers.

You build a report for the affiliate managers at the company to assist them in understanding affiliate performance.

The managers request a visual showing the total sales value of the latest 50 transactions for each affiliate. You have a data model that contains the following tables.

Table name	Column name
Transactions	TransactionDate
	ItemsOrdered
	Amount
	AffiliateID
	TransactionID
Affiliate	AffiliateID
	Name

The Affiliate table has a one-to-many relationship to the Transactions table based on the AffiliateID column.

You need to develop a measure to support the visual.

How should you complete the DAX expression? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
Revenue Last 50 Transactions =
    [ CALCULATE / CONCATENATEX / SUM / SUMX / TOPN ] (
        [ CALCULATE / CONCATENATEX / SUM / SUMX / TOPN ] (Transactions[Amount]),
            [ CALCULATE / CONCATENATEX / SUM / SUMX / TOPN ] (50, Transactions, Transactions
                [ [TransactionID] / [Amount], / [ItemsOrdered], / [TransactionDate], ]
    DESC)

    )
```

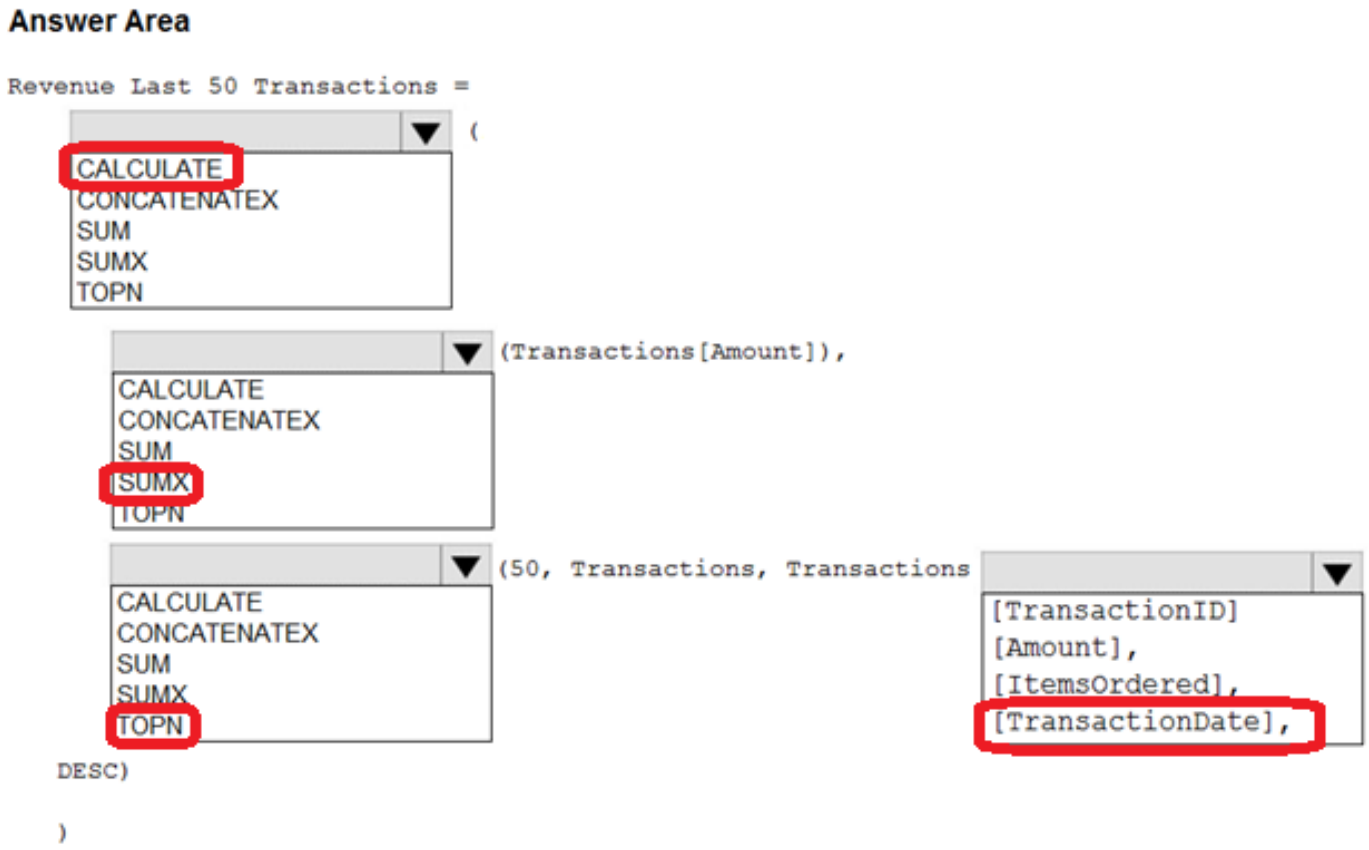
Answer:

Answer Area

```
Revenue Last 50 Transactions =
    [CALCULATE] (
        [SUMX] (Transactions[Amount]),
            [TOPN] (50, Transactions, Transactions
                [TransactionDate],
    DESC)

    )
```

Explanation:



Box 1: CALCULATE

Start with CALCULATE and use a SUMX.

CALCULATE evaluates an expression in a modified filter context.

Box 2: SUMX

SUMX returns the sum of an expression evaluated for each row in a table.

The following sample creates a measure with the sales of the top 10 sold products.

= SUMX(TOPN(10, SUMMARIZE(Product, [ProductKey], "TotalSales",
SUMX(RELATED(InternetSales_USD[SalesAmount_USD]),
InternetSales_USD[SalesAmount_USD]) +
SUMX(RELATED(ResellerSales_USD[SalesAmount_USD]),
ResellerSales_USD[SalesAmount_USD]))

Box 3: TOPN

TOPN returns the top N rows of the specified table.

Box 4: [TransactionDate]

TOPN Syntax: TOPN(<n_value>, <table>, <orderBy_expression>, [<order>[, <orderBy_expression>, [<order>]]…])

The orderBy_expression: Any DAX expression where the result value is used to sort the table and it is evaluated for each row of table.

Reference:

https://docs.microsoft.com/en-us/dax/topn-function-dax

QUESTION NO: 54

You are configuring a Microsoft Power BI data model to enable users to ask natural language questions by using Q&A.

You have a table named Customer that has the following measure.

Customer Count = DISTINCTCOUNT(Customer[CustomerID])

Users frequently refer to customers as subscribers.

You need to ensure that the users can get a useful result for "subscriber count" by using Q&A. The solution must minimize the size of the model.

What should you do?

A.
Set Summarize By to **None** for the CustomerID column.

B.
Add a synonym of "subscriber" to the Customer table.

C.
Add a synonym of "subscriberID" to the CustomerID column.

D.
Add a description of "subscriber count" to the Customer Count measure.

Answer: B

Explanation:

You can add synonyms to tables and columns.

Note: This step applies specifically to Q&A (and not to Power BI reports in general). Users often have a variety of terms they use to refer to the same thing, such as total sales, net sales, total net sales. You can add these synonyms to tables and columns in the Power BI model.

This step applies specifically to Q&A (and not to Power BI reports in general). Users often have a variety of terms they use to refer to the same thing, such as total sales, net sales, total net sales. You can add these synonyms to tables and columns in the Power BI model.

Reference:

https://docs.microsoft.com/en-us/power-bi/natural-language/q-and-a-best-practices

QUESTION NO: 55 HOTSPOT

You are creating a Microsoft Power BI data model that has the tables shown in the following table.

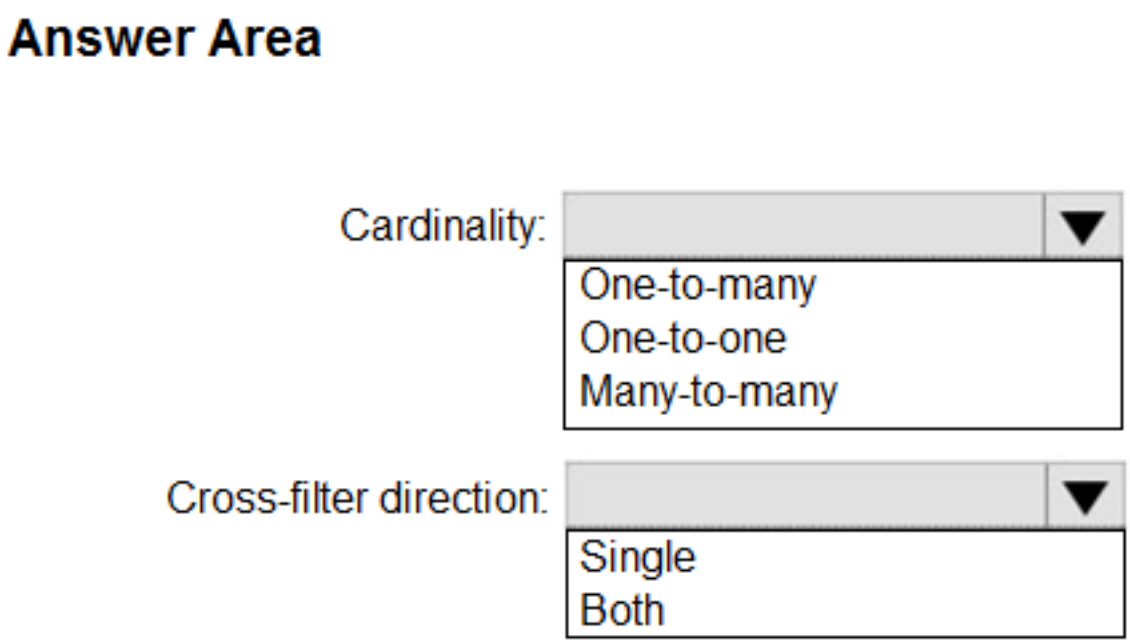
Table name	Column name
Sales	SalesID
	ProductID
	DateKey
	SalesAmount
Products	ProductID
	ProductName
	ProductCategoryID
ProductCategory	ProductCategoryID
	CategoryName

The Products table is related to the ProductCategory table through the ProductCategoryID column.

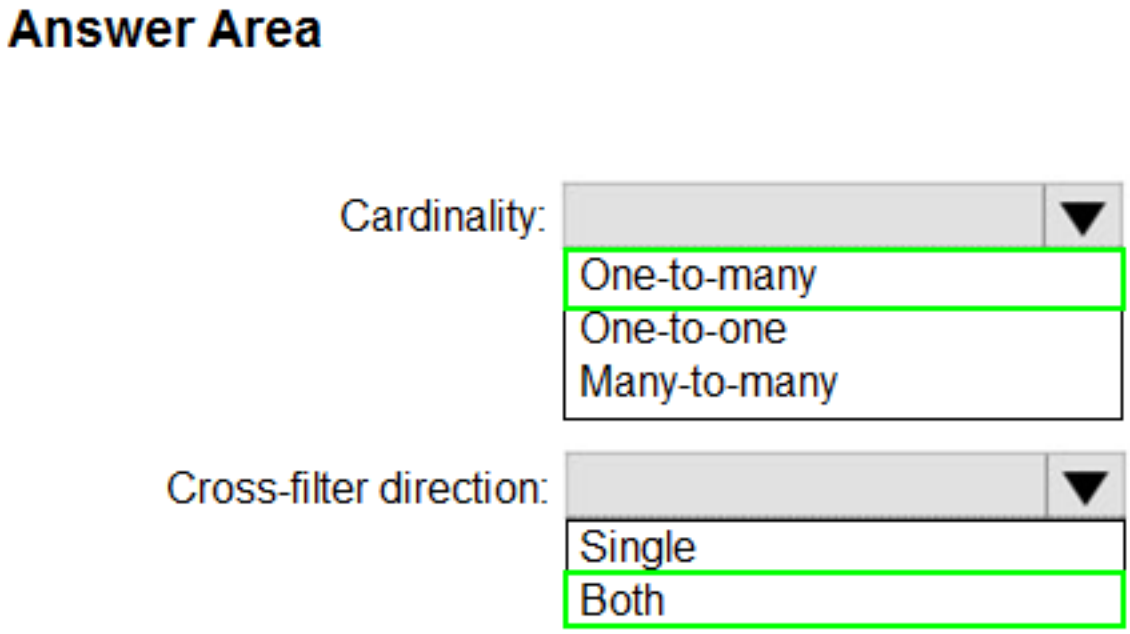
You need to ensure that you can analyze sales by product category.

How should you configure the relationships from ProductCategory to Products? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

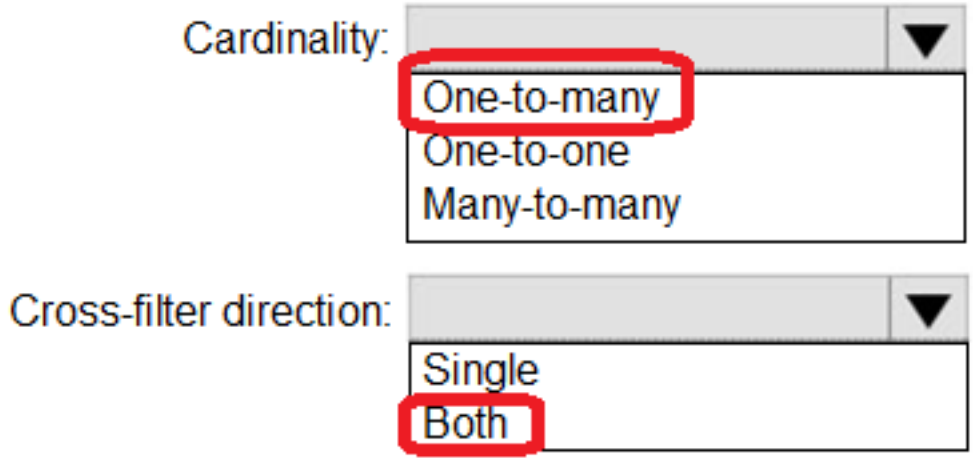


Answer:



Explanation:

Answer Area



Box 1: One-to-many

Each ProductCategory can have many Products, while each Product belongs to exactly one ProductCategory.

Box 2: Both

For One-to-many relationships, the cross filter direction is always from the "one" side, and optionally from the "many" side (bi-directional).

Note:

Cardinality type	Cross filter options
One-to-many (or Many-to-one)	Single Both
One-to-one	Both
Many-to-many	Single (Table1 to Table2) Single (Table2 to Table1) Both

Reference:

https://docs.microsoft.com/en-us/power-bi/transform-model/desktop-relationships-understand

QUESTION NO: 56 HOTSPOT

You are creating an analytics report that will consume data from the tables shown in the following table.

Table name	Column name	Data type
Sales	sales_id	Integer
	sales_date	Datetime
	Customer_id	Integer
	sales_amount	Floating
	employee_id	Integer
	sales_ship_date	Datetime
	store_id	Varchar(100)
Employee	employee_id	Integer
	first_name	Varchar(100)
	last_name	Varchar(100)
	employee_photo	Binary

There is a relationship between the tables.

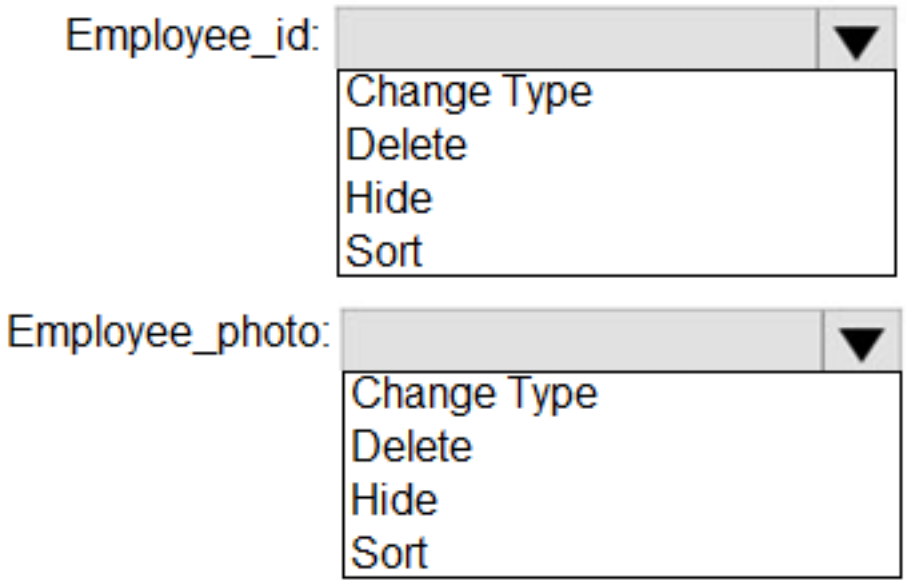
There are no reporting requirements on employee_id and employee_photo.

You need to optimize the data model.

What should you configure for employee_id and employee_photo? To answer, select the appropriate options in the answer area.

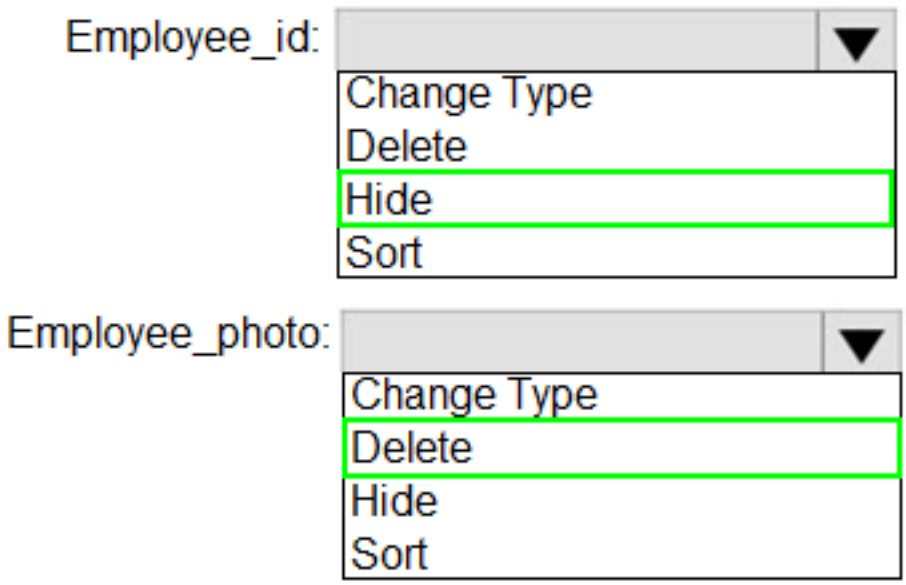
NOTE: Each correct selection is worth one point.

Answer Area



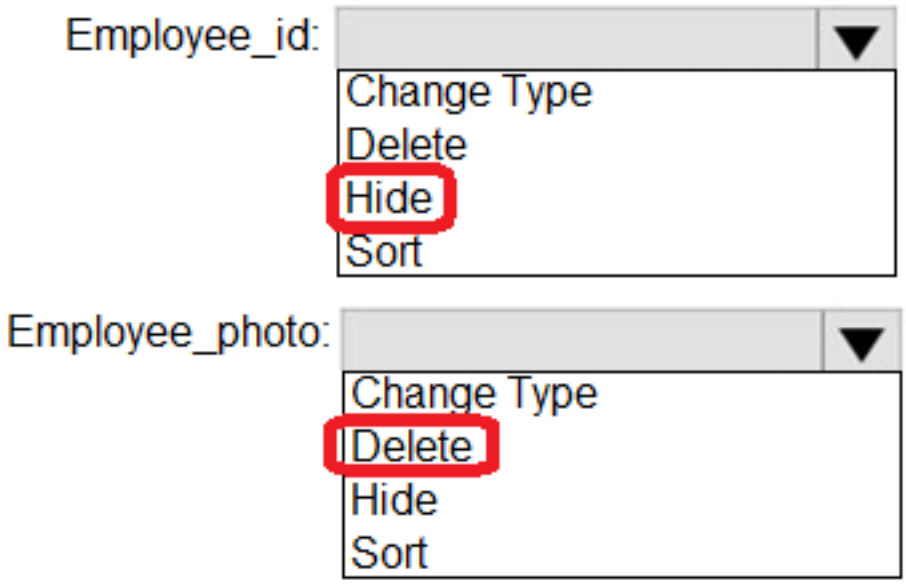
Answer:

Answer Area



Explanation:

Answer Area



Box 1: Hide

Optimize data by hiding fields and sorting visualization data

Box 2: Delete

The fastest way to optimize your Power BI report is to limit the number of columns to only the ones you need in your data model. Go through your tables in Power Query and determine what fields are being used. Delete these columns if they are not being used in any of your reports or calculations.

Reference:

https://tessellationtech.io/optimizing-power-bi-reports/

QUESTION NO: 57 HOTSPOT

You are creating a Microsoft Power BI model that has two tables named CityData and Sales.

CityData contains only the data shown in the following table.

State (CityData)	City	Population (million)
CA	Los Angeles	4.00
CA	San Francisco	0.90
New York	New York	8.50
WA	Seattle	0.70
WA	Spokane	0.20

Sales contains only the data shown in the following table.

State (Sales)	Type	Sales
CA	Internet	60
CA	Store	80
TX	Store	400
WA	Internet	150
WA	Store	100

CityData and Sales are related using a many-to-many relationship based upon the State column in each table.

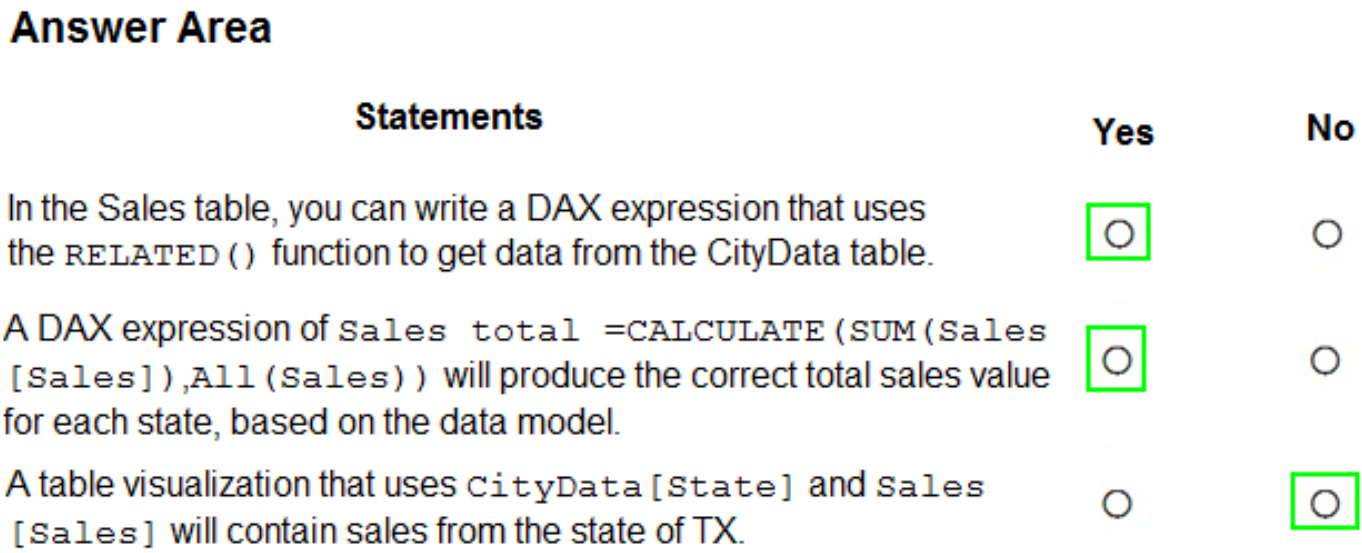
For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

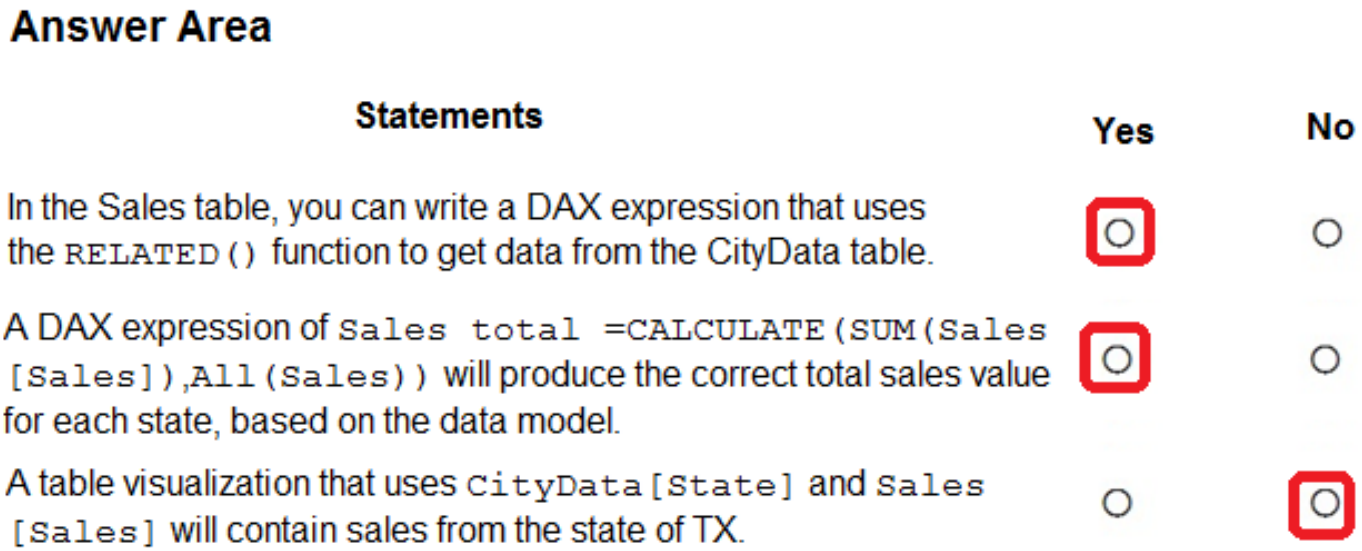
Answer Area

Statements	Yes	No
In the Sales table, you can write a DAX expression that uses the `RELATED()` function to get data from the CityData table.	○	○
A DAX expression of `Sales total =CALCULATE(SUM(Sales [Sales]),All(Sales))` will produce the correct total sales value for each state, based on the data model.	○	○
A table visualization that uses `CityData[State]` and `Sales [Sales]` will contain sales from the state of TX.	○	○

Answer:



Explanation:



Box 1: Yes

The Related function returns a related value from another table.

The RELATED function requires that a relationship exists between the current table and the table with related information. You specify the column that contains the data that you want, and the function follows an existing many-to-one relationship to fetch the value from the specified column in the related table. If a relationship does not exist, you must create a relationship.

Box 2: Yes

Box 3: No

TX only occurs in the Sales table, but not in the CityData table.

Reference:

https://docs.microsoft.com/en-us/dax/related-function-dax

https://docs.microsoft.com/en-us/dax/calculate-function-dax

QUESTION NO: 58 DRAG DROP

You build a report about warehouse inventory data. The dataset has more than 10 million product records from 200 warehouses worldwide.

You have a table named Products that contains the columns shown in the following table.

Column Name	Sample data
ProductDescription	Bikes > Mountain Bikes > Adventure Works > Super Carbon Bike > 26in wheels 42in frame
ProductCategory	Bikes
Manufacturer	Adventure Works
ProductSubcategory	Mountain Bikes
ProductSpecification	26in wheels 42in frame

Warehouse managers report that it is difficult to use the report because the report uses only the product name in tables and visuals. The product name is contained within the ProductDescription column and is always the fourth value.

You need to modify the report to support the warehouse managers requirement to explore inventory levels at different levels of the product hierarchy. The solution must minimize the model size.

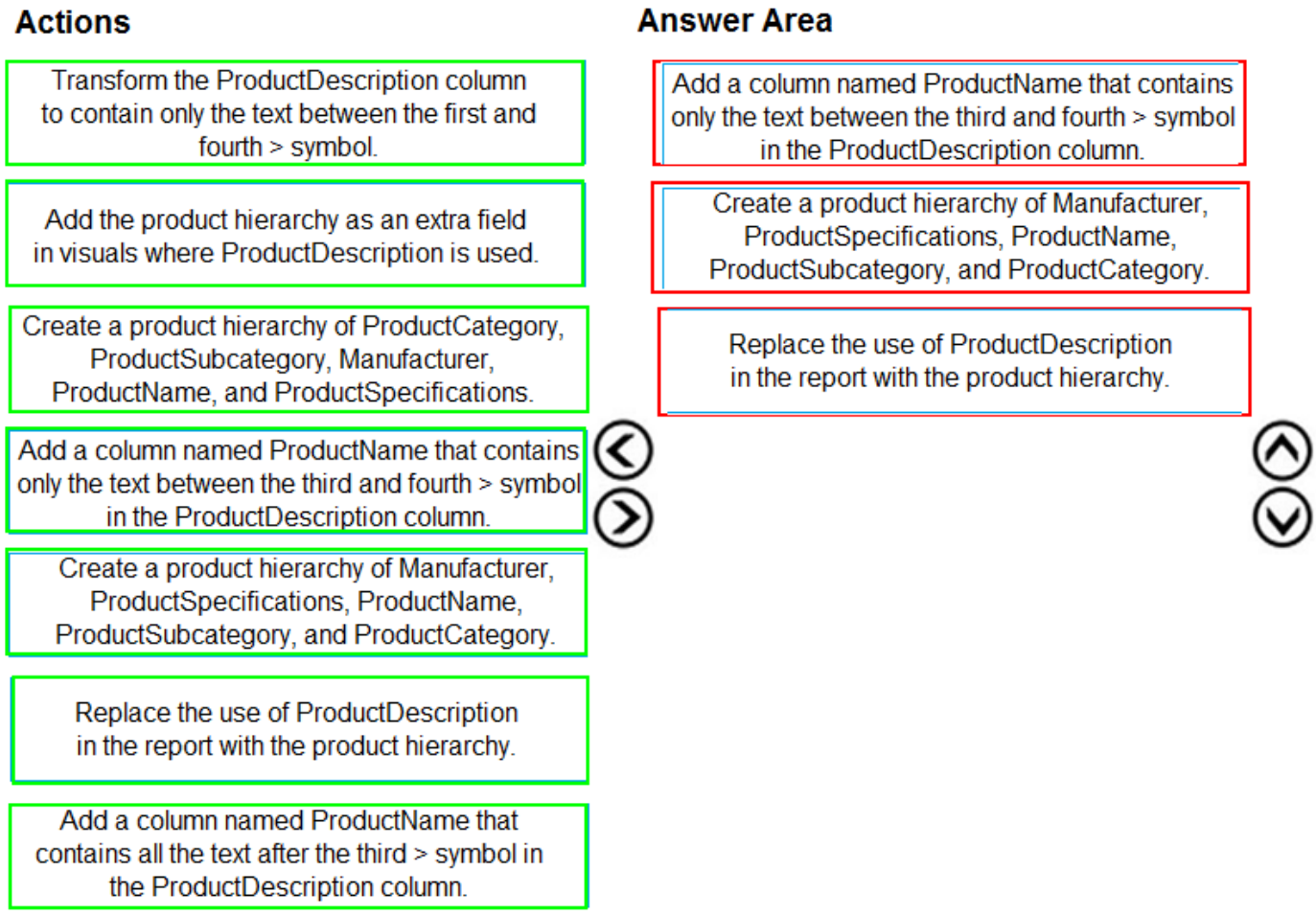
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Actions

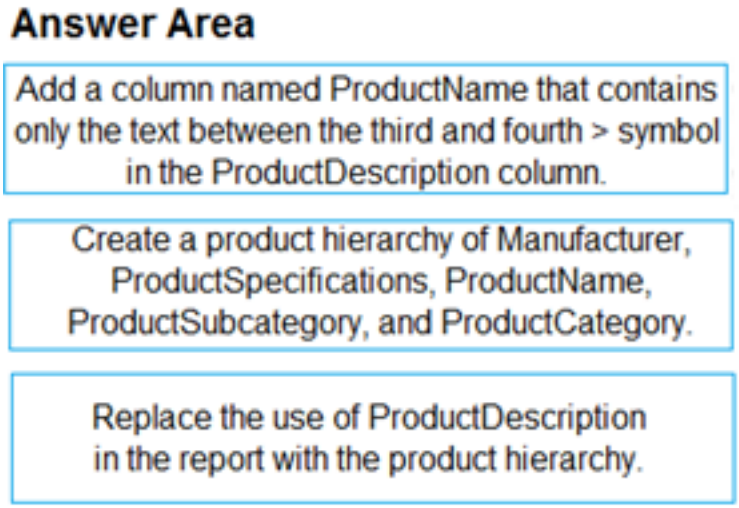
- Transform the ProductDescription column to contain only the text between the first and fourth > symbol.
- Add the product hierarchy as an extra field in visuals where ProductDescription is used.
- Create a product hierarchy of ProductCategory, ProductSubcategory, Manufacturer, ProductName, and ProductSpecifications.
- Add a column named ProductName that contains only the text between the third and fourth > symbol in the ProductDescription column.
- Create a product hierarchy of Manufacturer, ProductSpecifications, ProductName, ProductSubcategory, and ProductCategory.
- Replace the use of ProductDescription in the report with the product hierarchy.
- Add a column named ProductName that contains all the text after the third > symbol in the ProductDescription column.

Answer Area

Answer:



Explanation:



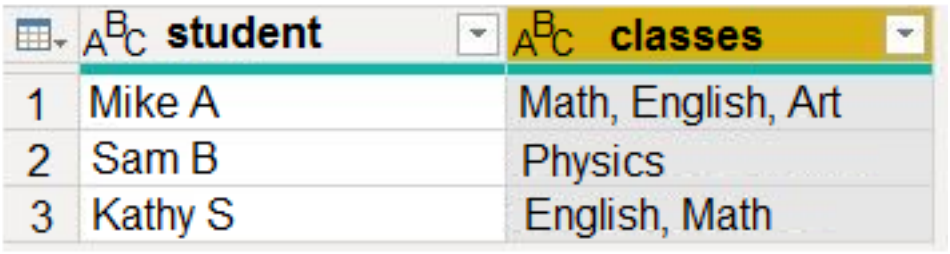
Power BI Desktop supports the use of inline hierarchy labels. With inline hierarchy labels, you can see hierarchy labels as you expand visuals using the Expand All feature.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-inline-hierarchy-labels

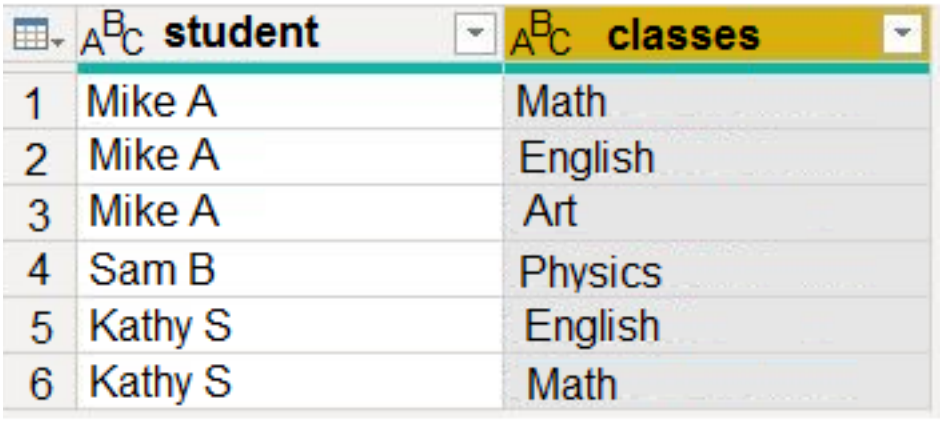
QUESTION NO: 59

You have a query that returns the data shown in the following exhibit.



	student	classes
1	Mike A	Math, English, Art
2	Sam B	Physics
3	Kathy S	English, Math

You need to configure the query to display the data shown in the following exhibit.



	student	classes
1	Mike A	Math
2	Mike A	English
3	Mike A	Art
4	Sam B	Physics
5	Kathy S	English
6	Kathy S	Math

Which step should you use in the query?

A.
= Table.SplitColumn(Source, "classes",

Splitter.SplitTextByDelimiter(",", QuoteStyle.None),

{"classes.1"})

B.
= Table.Unpivot(Source, {"classes"}, "Attribute", "Value")

C.
= Table.SplitColumn(Source, "classes",

Splitter.SplitTextByPositions({10}), {"classes.1"})

D.

= Table.ExpandListColumn(Table.TransformColumns(Source,

{{"classes", Splitter.SplitTextByDelimiter(",",

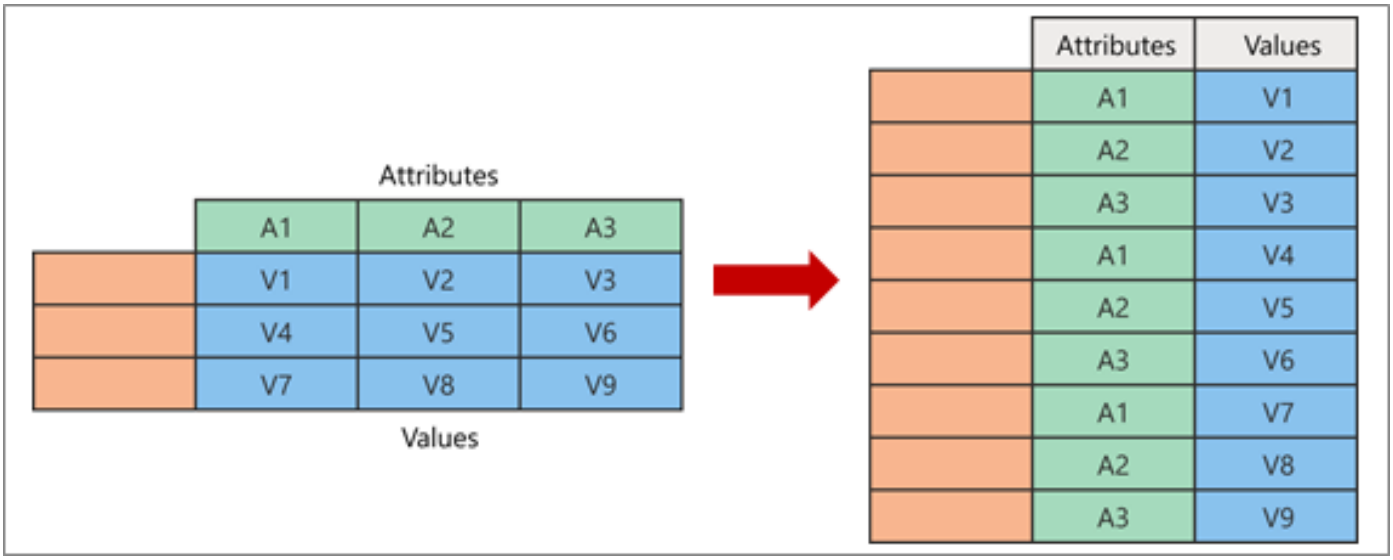
QuoteStyle.None), let itemType = (type nullable text) meta

[Serialized.Text = true] in type {itemType}}}), "classes")

Answer: B

Explanation:

Power Query Unpivot columns: You might want to unpivot data, sometimes called flattening the data, to put it in a matrix format so that all similar values are in one column. This is necessary, for example, to create a chart or a report.



Note:

Syntax: Table.Unpivot(table as table, pivotColumns as list, attributeColumn as text, valueColumn as text) as table

Table.Unpivot translates a set of columns in a table into attribute-value pairs, combined with the rest of the values in each row.

Reference:

https://docs.microsoft.com/en-us/power-query/unpivot-column

https://docs.microsoft.com/en-us/powerquery-m/table-unpivot

QUESTION NO: 60

You have files sales regions. Each region is assigned a single salesperson.

You have an imported dataset that has a dynamic row-level security (RLS) role named Sales. The Sales role filters sales transaction data by salesperson.

Salespeople must see only the data from their region.

You publish the dataset to powerbi.com, set RLS role membership, and distribute the dataset and related reports to the salespeople.

A salesperson reports that she believes she should see more data.

You need to verify what data the salesperson currently sees.

What should you do?

A.
Use the Test as role option to view data as the salesperson's user account.

B.
Instruct the salesperson to open the report in Microsoft Power BI Desktop.

C.
Filter the data in the reports to match the intended logic in the filter on the sales transaction table.

D.
Use the Test as role option to view data as the Sales role.

Answer: D
Explanation:

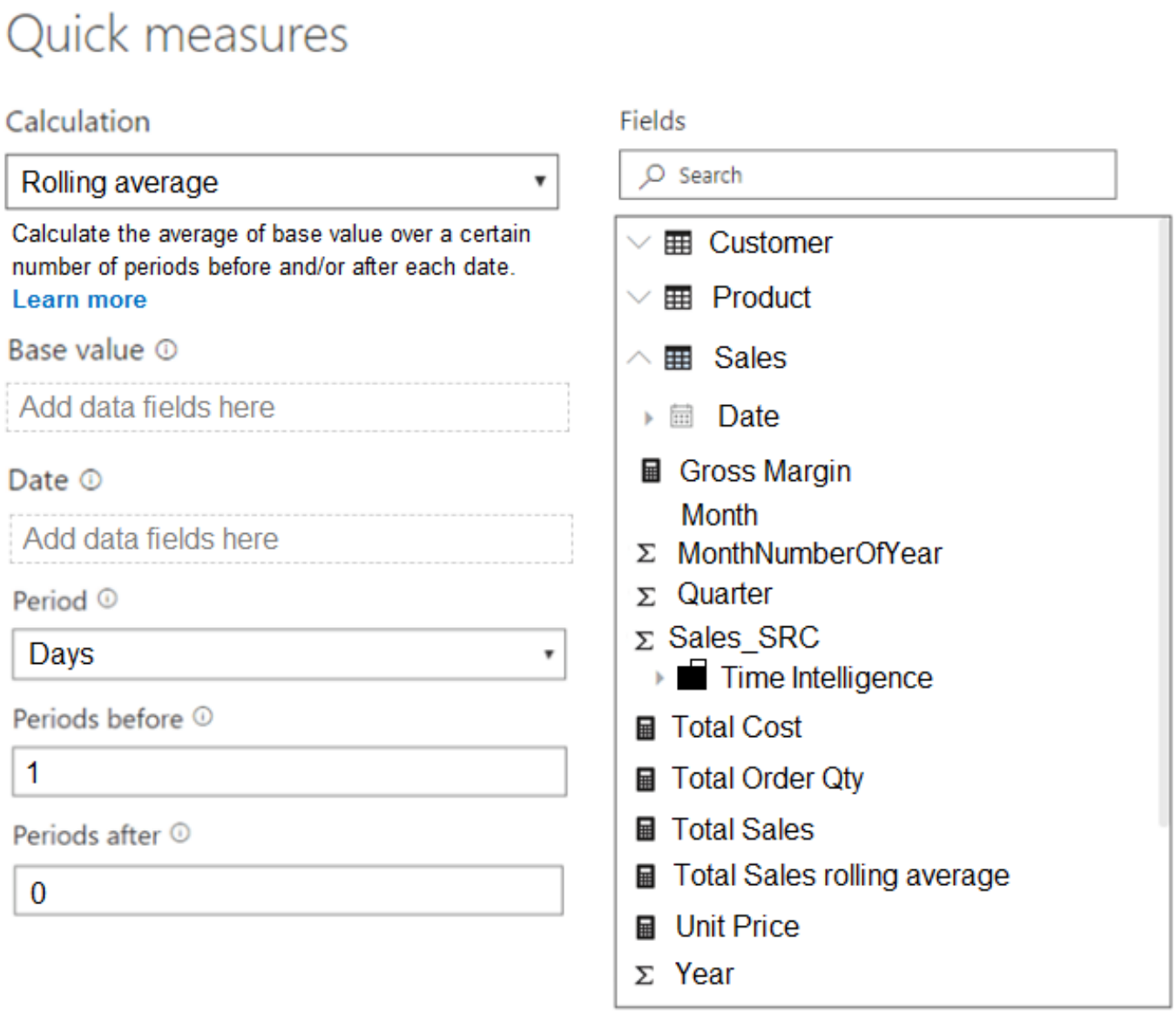
Validate the roles within Power BI Desktop

Reference:

https://docs.microsoft.com/en-us/power-bi/admin/service-admin-rls

QUESTION NO: 61 HOTSPOT

You are creating a quick measure as shown in the following exhibit.

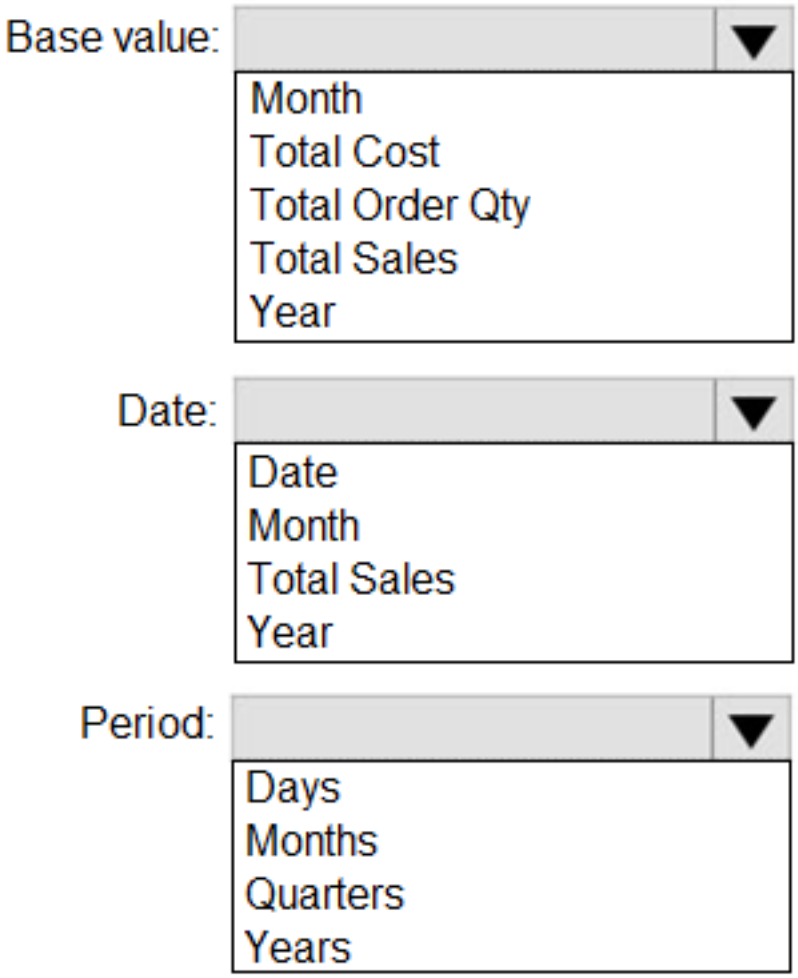


You need to create a monthly rolling average measure for Sales over time.

How should you configure the quick measure calculation? To answer, select the appropriate options in the answer area.

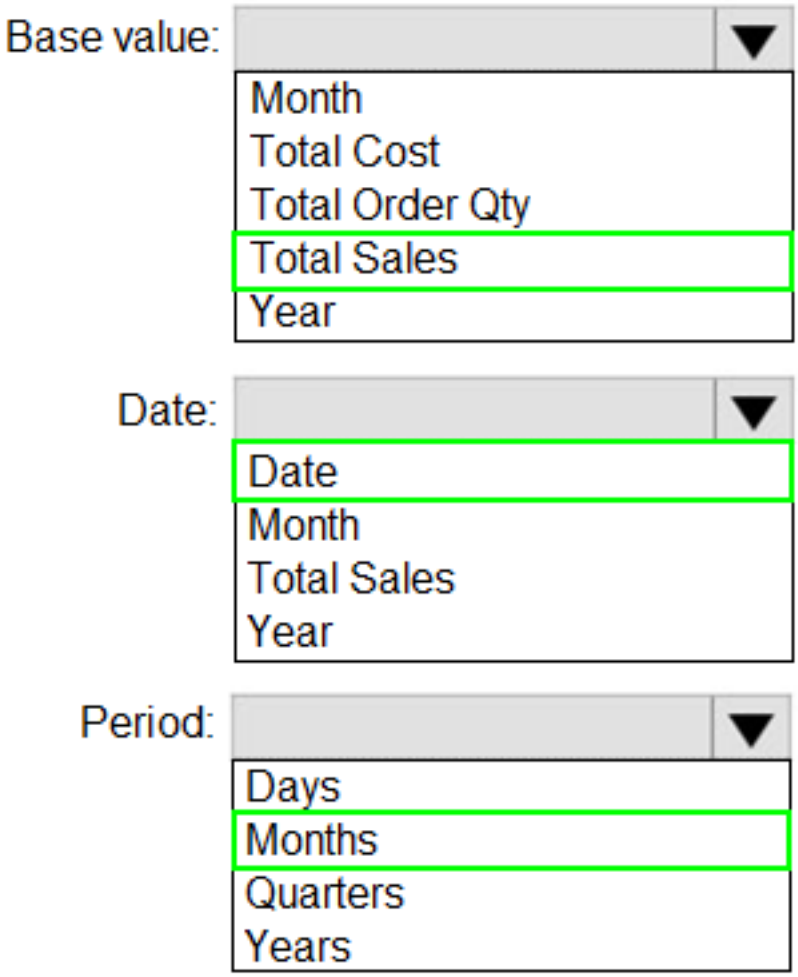
NOTE: Each correct selection is worth one point.

Answer Area



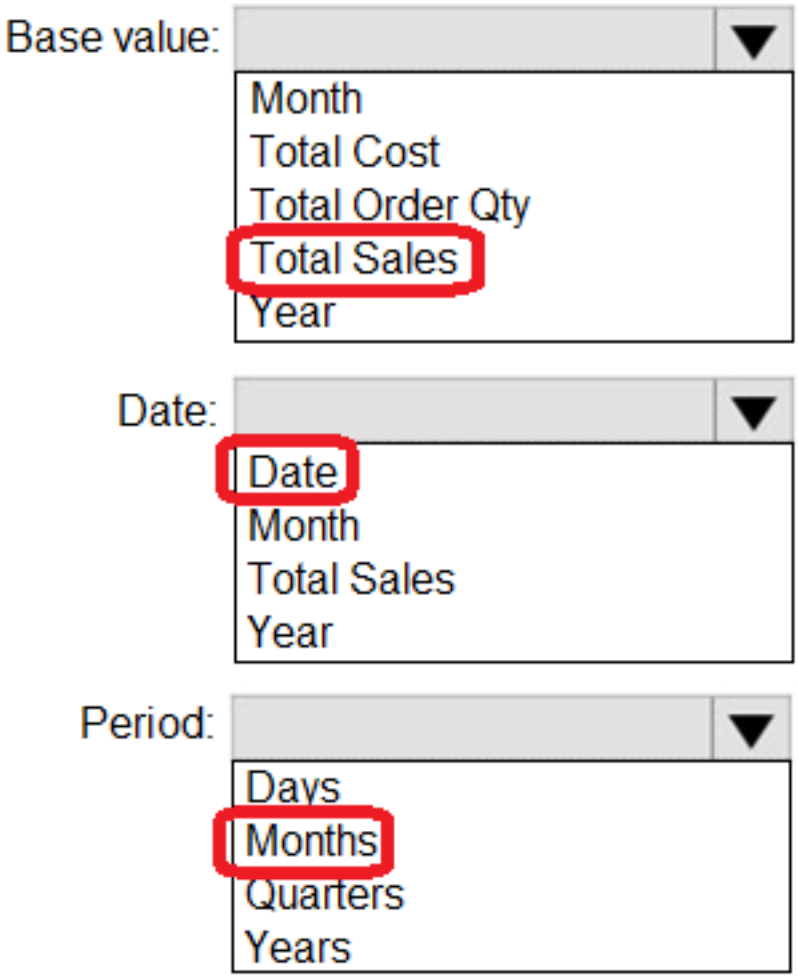
Answer:

Answer Area



Explanation:

Answer Area



Box 1: Total Sales

We select the field Total Sales

Box 2: Date

Select a date field.

Box 3: Month

Monthly periods.

Reference:

https://docs.microsoft.com/en-us/power-bi/transform-model/desktop-quick-measures

QUESTION NO: 62

You have four sales regions. Each region has multiple sales managers.

You implement row-level security (RLS) in a data model. You assign the relevant mail-enabled security group to each role.

You have sales reports that enable analysis by region. The sales managers can view the sales records of their region. The sales managers are prevented from viewing records from other regions.

A sales manager changes to a different region.

You need to ensure that the sales manager can see the correct sales data.

What should you do?

A.
Change the Microsoft Power BI license type of the sales manager.

B.
From Microsoft Power BI Desktop, edit the Row-Level Security setting for the reports.

C.
Request that the sales manager be added to the correct Azure Active Directory group.

D.
Manage the permissions of the underlying dataset.

Answer: C
Explanation:

Using AD Security Groups, you no longer need to maintain a long list of users.

All that you will need to do is to put in the AD Security group with the required permissions and Power BI will do the REST! This means a small and simple security file with the permissions and AD Security group.

Note: Configure role mappings

Once published to Power BI, you must map members to dataset roles.

Members can be user accounts or security groups. Whenever possible, we recommend you map security groups to dataset roles. It involves managing security group memberships in Azure Active

Directory. Possibly, it delegates the task to your network administrators.

Reference:

https://www.fourmoo.com/2018/02/20/dynamic-row-level-security-is-easy-with-active-directory-security-groups/

https://docs.microsoft.com/en-us/power-bi/guidance/rls-guidance

QUESTION NO: 63 DRAG DROP

You have a Microsoft Power BI data model that contains three tables named Sales, Product, and Date.

The Sales table has an existing measure named [Total Sales] that sums the total sales from the Sales table.

You need to write a calculation that returns the percentage of total sales that a selected ProductCategoryName value represents. The calculation must respect any slicers on ProductCategoryName and must show the percentage of visible total sales. For example, if there are four ProductCategoryName values, and a user filters one out, a table showing ProductCategoryName and the calculation must sum up to 100 percent.

How should you complete the calculation? To answer, drag the appropriate values to the correct targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Values

- ALL
- ALLSELECTED
- CALCULATE
- CALCULATETABLE
- CURRENTGROUP
- DIVIDE
- SUMMARIZE
- TOPN

Answer Area

```
Product Category % of Total 2 =
    [          ]([Total Sales],
        [          ]( [Total Sales] ,
            [          ](
 Product[ProductCategoryName] ) ) )
```

Answer:

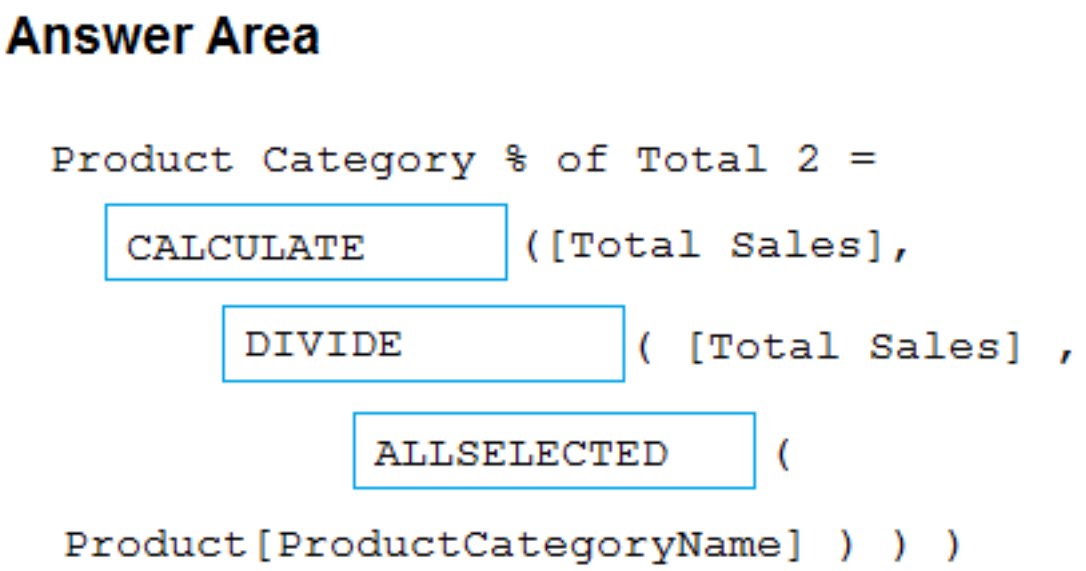
Values

- ALL
- ALLSELECTED
- CALCULATE
- CALCULATETABLE
- CURRENTGROUP
- DIVIDE
- SUMMARIZE
- TOPN

Answer Area

```
Product Category % of Total 2 =
    CALCULATE      ([Total Sales],
        DIVIDE     ( [Total Sales] ,
            ALLSELECTED    (
 Product[ProductCategoryName] ) ) )
```

Explanation:



Box 1: CALCULATE

CALCULATE rvaluates an expression in a modified filter context.

Box 2: DIVIDE

As a data modeler, when you write a DAX expression to divide a numerator by a denominator, you can choose to use the DIVIDE function or the divide operator (/ - forward slash).

When using the DIVIDE function, you must pass in numerator and denominator expressions.

Box 3: ALLSELECTED

ALLSELECTED removes context filters from columns and rows in the current query, while retaining all other context filters or explicit filters.

The ALLSELECTED function gets the context that represents all rows and columns in the query, while keeping explicit filters and contexts other than row and column filters. This function can be used to obtain visual totals in queries.

Example:

measure 'Reseller Sales'[Reseller Visual Total]=calculate(sum('Reseller Sales'[Sales Amount]), ALLSELECTED())

Reference:

https://docs.microsoft.com/en-us/dax/allselected-function-dax

QUESTION NO: 64

You have sales data in a star schema that contains four tables named Sales, Customer, Date, and Product. The Sales table contains purchase and ship dates.

Most often, you will use the purchase date to analyze the data, but you will analyze the data by both dates independently and together.

You need to design an imported dataset to support the analysis. The solution must minimize the model size and the number of queries against the data source.

Which data modeling design should you use?

A.
Use the Auto Date/Time functionality in Microsoft Power BI and do NOT import the Date table.

B.
Create an active relationship between Sales and Date for the purchase date and an inactive relationship for the ship date.

C.
On the Date table, use a reference query in Power Query and create active relationships between Sales and both Date tables in the modeling view.

D.
Import the Date table twice in Power Query and create active relationships between Sales and both Date tables in the modeling view.

Answer: D
Explanation:

Microsoft recommends defining active relationships whenever possible. They widen the scope and potential of how your model can be used by report authors, and users working with Q&A.

Refactoring methodology (example): Here's a methodology to refactor a model from a single role-playing dimension-type table, to a design with one table per role.

Only one relationship can be active.

Note: If you query two or more tables at the same time, when the data is loaded, Power BI Desktop attempts to find and create relationships for you. The relationship options Cardinality,

Cross filter direction, and Make this relationship active are automatically set.

Incorrect:

Not B: Both dates will be used dates independently and together, so we cannot use a passive relationship.

Reference:

https://docs.microsoft.com/en-us/power-bi/transform-model/desktop-create-and-manage-relationships

https://docs.microsoft.com/en-us/power-bi/guidance/relationships-active-inactive

QUESTION NO: 65

You have a sales system that contains the tables shown in the following table.

Table name	Column name
Sales	sales_ID
	sales_date
	sales_amount
Date	DateID
	Month
	Week
	Year

The Date table is marked as a date table. DateID is the date data type.

You need to create an annual sales growth percentage measure.

Which DAX expression should you use?

A.
SUM(sales[sales_amount]) - CALCULATE(SUM(sales[sales_amount]), SAMEPERIODLASTYEAR('Date'[DateID])

B.
(SUM('Sales'[sales_amount]) - CALCULATE(SUM('Sales'[sales_amount]), SAMEPERIODLASTYEAR('Date'[DateID])))

/ CALCULATE(SUM('Sales'[sales_amount]), SAMEPERIODLASTYEAR('Date'[DateID]))

C.
CALCULATE(SUM(sales[sales_amount]), DATESYTD('Date'[DateID]))

D.
CALCULATE(SUM(sales[sales_amount]), SAMEPERIODLASTYEAR('Date'[DateID]))

Answer: B
Explanation:

SAMEPERIODLASTYEAR returns a table that contains a column of dates shifted one year back in time from the dates in the specified dates column, in the current context.

Reference:

https://docs.microsoft.com/en-us/dax/sameperiodlastyear-function-dax

QUESTION NO: 66

In Power BI Desktop, you are building a sales report that contains two tables. Both tables have row-level security (RLS) configured.

You need to create a relationship between the tables. The solution must ensure that bidirectional cross-filtering honors the RLS settings.

What should you do?

A.
Create an active relationship between the tables and select **Assume referential integrity**.

B.
Create an inactive relationship between the tables and select **Assume referential integrity**.

C.
Create an inactive relationship between the tables and select **Apply security filter in both directions**.

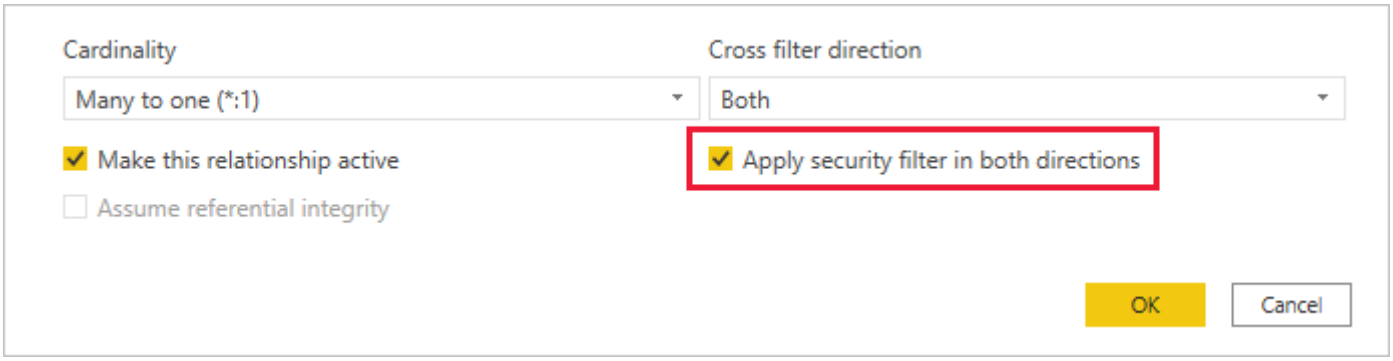
D.

Create an active relationship between the tables and select **Apply security filter in both directions**.

Answer: D

Explanation:

By default, row-level security filtering uses single-directional filters, whether the relationships are set to single direction or bi-directional. You can manually enable bi-directional cross-filtering with row-level security by selecting the relationship and checking the Apply security filter in both directions checkbox. Select this option when you've also implemented dynamic row-level security at the server level, where row-level security is based on username or login ID.



Reference:

https://docs.microsoft.com/en-us/power-bi/admin/service-admin-rls

QUESTION NO: 67

You have a Power BI dataset that contains a table named Temperature Readings. Temperature Readings contains the columns shown in the following table.

Name	Data type	Value example
DateTime	DateTime	4-Aug-2020 13:30:01
Longitude	Decimal	10.049567988755534
Latitude	Decimal	53.462766759577057
TempCelcius	Decimal	12.5

The table has 12 million rows. All the columns are needed for analysis.

You need to optimize the dataset to decrease the model size. The solution must not affect the

precision of the data.

What should you do?

A.
Split the DateTime column into separate **date** and **time** columns.

B.
Change the data type of the TempCelcius column to **Integer**.

C.
Change the data type of the Latitude column to **Fixed Decimal**.

D.
Disable the Power Query load.

Answer: D
Explanation:

Disable Power Query query load.

Power Query queries that are intended support data integration with other queries should not be loaded to the model. To avoid loading the query to the model, take care to ensure that you disable query load in these instances.

Reference:

https://docs.microsoft.com/en-us/power-bi/guidance/import-modeling-data-reduction#disable-power-query-query-load

QUESTION NO: 68

You are designing a Power BI model that uses DirectQuery to connect to an Azure SQL database named sql1. The model will include two tables named Sales and Date.

You need to limit the sales data to the last rolling year. The solution must minimize execution times for queries performed against sql1.

What should you do?

A.

From Power Query Editor, add a Relative Year column to the Date table by using a DAX function.

B.
Create a calculated column in the Sales table.

C.
Add a Relative Year column to the Date table.

D.
From Power Query Editor, use relative date filtering.

Answer: D
Explanation:

Reference:

https://www.thepoweruser.com/2019/04/02/relative-date-filters-in-power-bi-dax-power-query/

QUESTION NO: 69

You are configuring a Microsoft Power BI data model to enable users to ask natural language questions by using Q&A.

You have a table named Customer that has the following measure.

Customer Count = DISTINCTCOUNT(Customer[CustomerID])

Users frequently refer to customers as subscribers.

You need to ensure that the users can get a useful result for "subscriber count" by using Q&A. The solution must minimize the size of the model.

What should you do?

A.
Add a synonym of "subscriber count" to the Customer Count measure.

B.
Add a calculated table named Subscriber that is a duplicate of the Customer table.

C.

Add a description of "subscriber count" to the Customer Count measure.

D.
Add a synonym of "subscriberID" to the CustomerID column.

Answer: A
Explanation:

Reference:

https://www.oreilly.com/library/view/microsoft-power-bi/9781788290142/3ce1bbf2-de9f-4ef0-a368-fc99923b5493.xhtml

Topic 3, Visualize the Data

QUESTION NO: 70 HOTSPOT

Case Study

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question, click the Question button to return to the question.

Overview

Litware, Inc. is an online retailer that uses Microsoft Power BI dashboards and reports.

The company plans to leverage data from Microsoft SQL Server databases, Microsoft Excel files, text files, and several other data sources.

Litware uses Azure Active Directory (Azure AD) to authenticate users.

Existing Environment

Sales Data

Litware has online sales data that has the SQL schema shown in the following table.

Table name	Column name	Data type
Sales_Region	region_id	Integer
	name	Varchar
Region_Manager	region_id	Integer
	manager_id	Integer
Sales_Manager	sales_manager_id	Integer
	name	Varchar
	username	Varchar
Sales	sales_id	Integer
	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
Weekly_Returns	week_id	Integer
	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
	region_id	Integer

In the Date table, the date_id column has a format of yyyymmdd and the month column has a format of yyyymm.

The week column in the Date table and the week_id column in the Weekly_Returns table have a format of yyyyww.

The sales_id column in the Sales table represents a unique transaction.

The region_id column can be managed by only one sales manager.

Data Concerns

You are concerned with the quality and completeness of the sales data. You plan to verify the sales data for negative sales amounts.

Reporting Requirements

Litware identifies the following technical requirements:

- Executives require a visual that shows sales by region.
- Regional managers require a visual to analyze weekly sales and returns.
- Sales managers must be able to see the sales data of their respective region only.
- The sales managers require a visual to analyze sales performance versus sales targets.
- The sale department requires reports that contain the number of sales transactions.
- Users must be able to see the month in reports as shown in the following example: Feb 2020.
- The customer service department requires a visual that can be filtered by both sales month and ship month independently.

You need to create a visualization to meet the reporting requirements of the sales managers.

How should you create the visualization? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Visualization type:
- Card
- Donut chart
- Gauge
- Key influencers
- KPI

Indicator:
- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Trend axis:
- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Target goals:
- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Answer:

Answer Area

Visualization type:

- Card
- Donut chart
- Gauge
- Key influencers
- KPI

Indicator:

- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
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- Date[month]
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- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Target goals:

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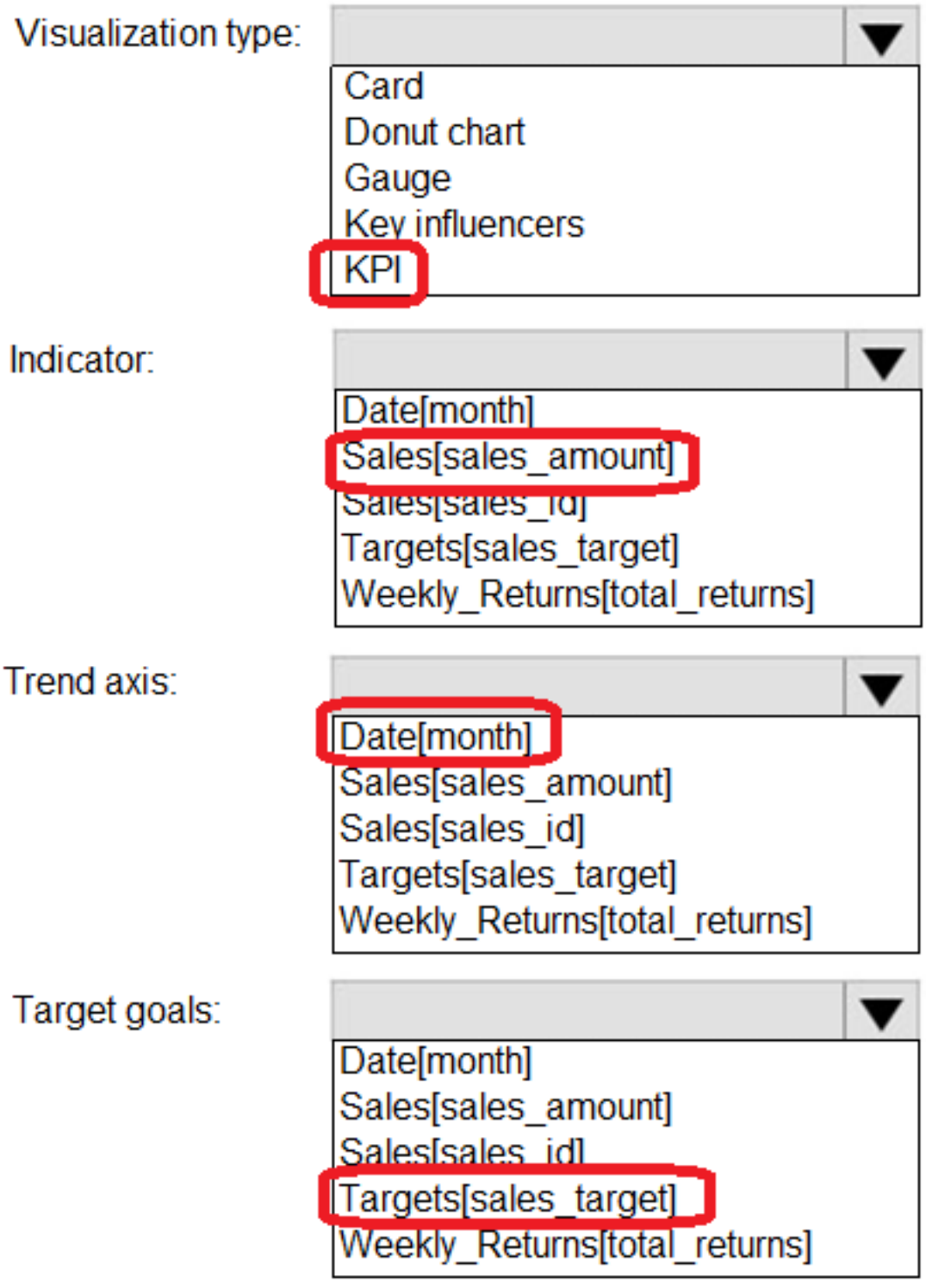
- Targets[sales_target]
- Weekly_Returns[total_returns]

Explanation:

Answer Area



Scenario: The sales managers require a visual to analyze sales performance versus sales targets.

Box 1: KPI

A Key Performance Indicator (KPI) is a visual cue that communicates the amount of progress made toward a measurable goal.

Box 2: Sales[sales_amount]

Box 3: Date[month]

Time > FiscalMonth. This value will represent the trend.

Box 4: Targets[sales_target]

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-kpi

QUESTION NO: 71 HOTSPOT

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	sales_date_id	Integer
	sales_amount	Floating
	customer_id	Integer
	sales_ship_date_id	Integer
	region_id	Varchar
Customer_Date	customer_id	Integer
	first_name	Varchar
	last_name	Varchar
Date	date_id	Integer
	date	Date
	month	Integer
	week	Integer
	year	Integer
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	total_returns	Floating
	sales_region_id	Varchar
Targets	target_id	Integer
	sales_target	Decimal
	date_id	Integer
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You need to create a KPI visualization to meet the reporting requirements of the sales managers.

How should you create the visualization? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Indicator:

- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Trend axis:

- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Target goals:

- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Answer:

Answer Area

Indicator:

- Date[month]
- **Sales[sales_amount]**
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

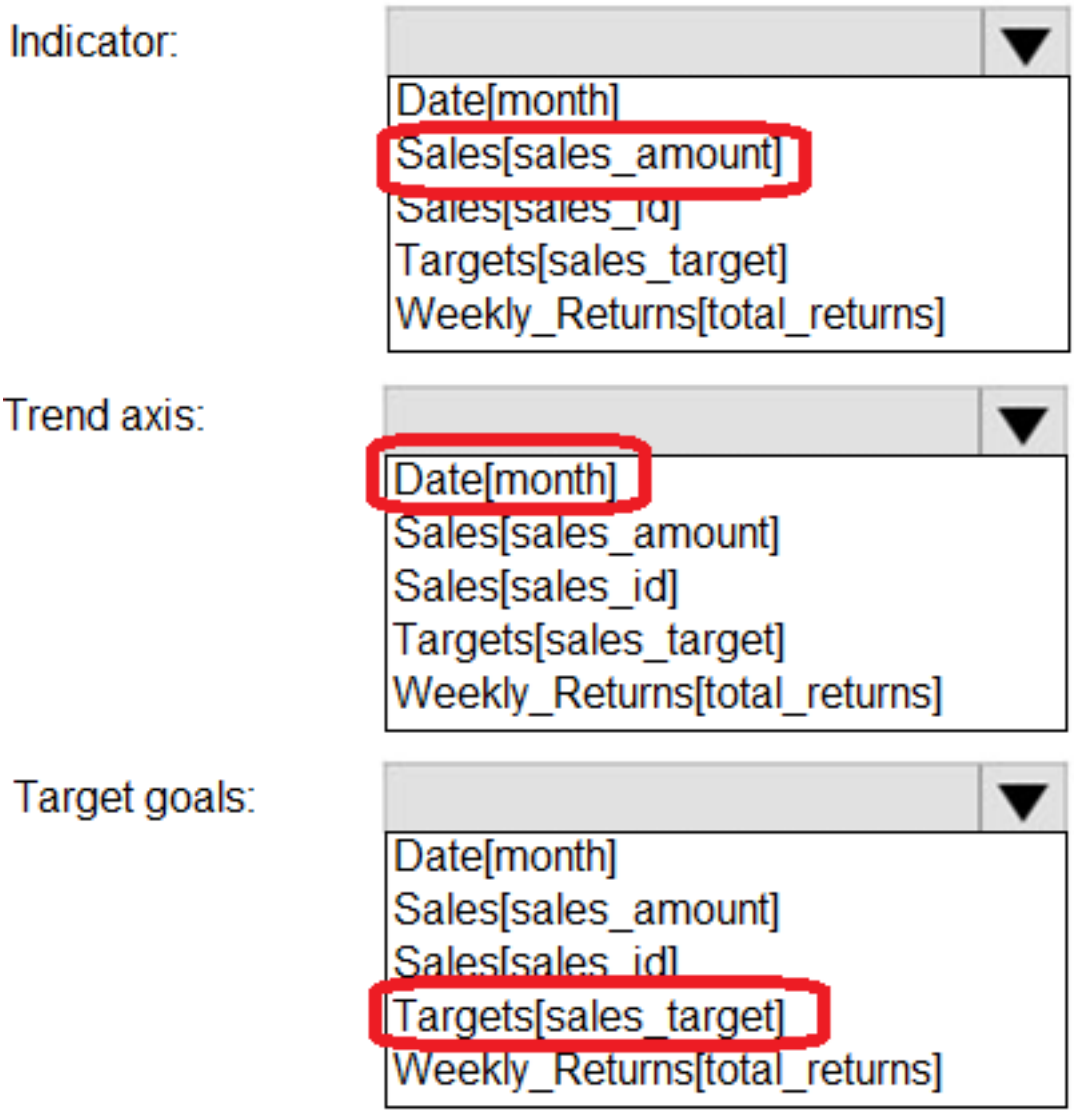
Trend axis:

- **Date[month]**
- Sales[sales_amount]
- Sales[sales_id]
- Targets[sales_target]
- Weekly_Returns[total_returns]

Target goals:

- Date[month]
- Sales[sales_amount]
- Sales[sales_id]
- **Targets[sales_target]**
- Weekly_Returns[total_returns]

Explanation:



Scenario: The sales managers require a visual to analyze sales performance versus sales targets.

Box 1: Sales[sales_amount]

Box 2: Date[month]

Time > FiscalMonth. This value will represent the trend.

Box 3: Targets[sales_target]

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-kpi

QUESTION NO: 72 DRAG DROP

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Overview

Contoso, Ltd. is a manufacturing company that produces outdoor equipment. Contoso has quarterly board meetings for which financial analysts manually prepare Microsoft Excel reports, including profit and loss statements for each of the company's four business units, a company balance sheet, and net income projections for the next quarter.

Existing Environment

Data and Sources

Data for the reports comes from three sources. Detailed revenue, cost, and expense data comes from an Azure SQL database. Summary balance sheet data comes from Microsoft Dynamics 365 Business Central. The balance sheet data is not related to the profit and loss results, other than they both relate to dates.

Monthly revenue and expense projections for the next quarter come from a Microsoft SharePoint Online list. Quarterly projections relate to the profit and loss results by using the following shared

dimensions: date, business unit, department, and product category.

Net Income Projection Data

Net income projection data is stored in a SharePoint Online list named Projections in the format shown in the following table.

MonthStartDate	Projection type	ProductCategory	Department	Projection
1-Apr-20	Revenue	Bikes	N/A	200,000
1-Apr-20	Revenue	Components	N/A	250,000
1-Apr-20	Revenue	Clothing	N/A	300,000
1-Apr-20	Revenue	Accessories	N/A	150,000
1-May-20	Revenue	Bikes	N/A	200,000
1-May-20	Revenue	Components	N/A	250,000
1-Apr-20	Expense	Bikes	Bike Manufacture	50,000
1-Apr-20	Expense	Bikes	Bike Sales	3,333

Revenue projections are set at the monthly level and summed to show projections for the quarter.

Balance Sheet Data

The balance sheet data is imported with final balances for each account per month in the format shown in the following table.

AccountCategory	Account	Month	Year	BalanceAmount
Current assets	Cash and cash equivalents	3	2020	20,289
Current assets	Inventories	3	2020	4,855
Long-term liabilities	Long-term debt	3	2020	50,207
Current assets	Cash and cash equivalents	2	2020	28,209
Current assets	Inventories	2	2020	5,845
Long-tern liabilities	Long-tern debt	2	2020	49,887
Current assets	Cash and cash equivalents	1	2020	25,567
Current assets	Inventories	1	2020	65,998
Long-term liabilities	Long-term debt	1	2020	46,124

There is always a row for each account for each month in the balance sheet data.

Dynamics 365 Business Central Data

Business Central contains a product catalog that shows how products roll up to product categories, which roll up to business units.

Revenue data is provided at the date and product level. Expense data is provided at the date and department level.

Business Issues

Historically, it has taken two analysts a week to prepare the reports for the quarterly board meetings. Also, there is usually at least one issue each quarter where a value in a report is wrong because of a bad cell reference in an Excel formula. On occasion, there are conflicting results in the reports because the products and departments that roll up to each business unit are not defined consistently.

Requirements

Planned Changes

Contoso plans to automate and standardize the quarterly reporting process by using Microsoft Power BI. The company wants to how long it takes to populate reports to less than two days. The company wants to create common logic for business units, products, and departments to be used across all reports, including, but not limited, to the quarterly reporting for the board.

Technical Requirements

Contoso wants the reports and datasets refreshed with minimal manual effort.

The company wants to provide a single package of reports to the board that contains custom navigation and links to supplementary information.

Maintenance, including manually updating data and access, must be minimized as much as possible.

Security Requirements

The reports must be made available to the board from powerbi.com. An Azure Active Directory group will be used to share information with the board.

The analysts responsible for each business unit must see all the data the board sees, except the

profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

Name	Data type	Example
Date	Date	4-Apr-2020
Month	Integer	20,2004
Month Name	Text	February
Quarter	Integer	20,202
Year	Integer	2,020

The definitions and attributes of products, departments, and business units must be consistent across all reports.

The board must be able to get the following information from the quarterly reports:

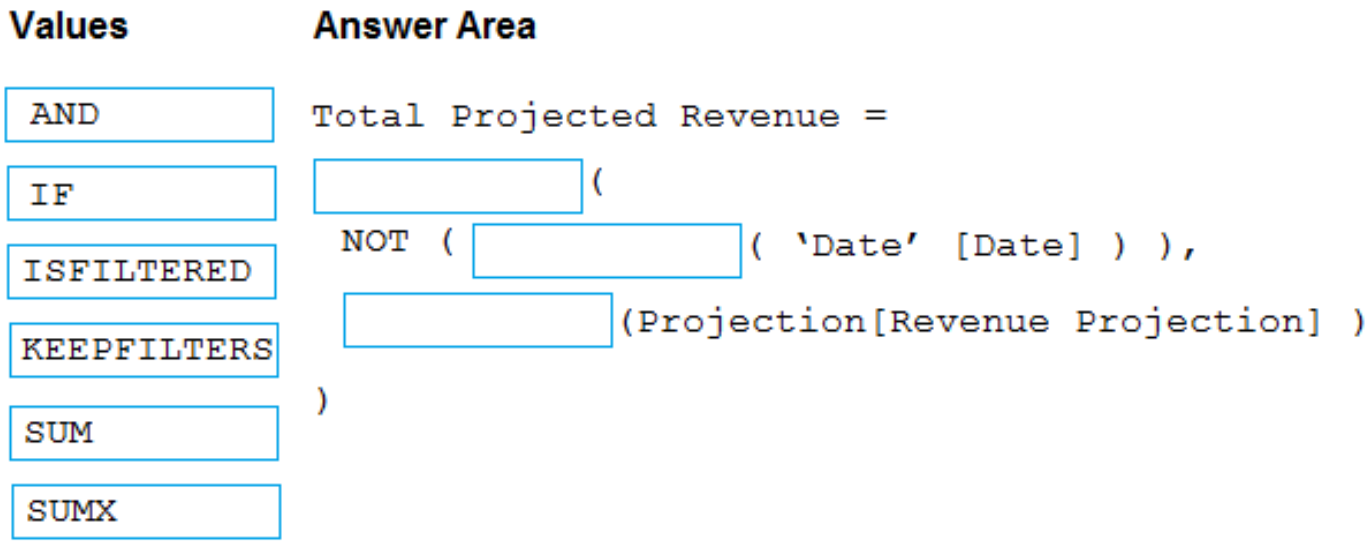
- Revenue trends over time
- Ending balances for each account
- A comparison of expenses versus projections by quarter
- Changes in long-term liabilities from the previous quarter
- A comparison of quarterly revenue versus the same quarter during the prior year

You need to create a DAX measure in the data model that only allows users to see projections at the appropriate level of granularity.

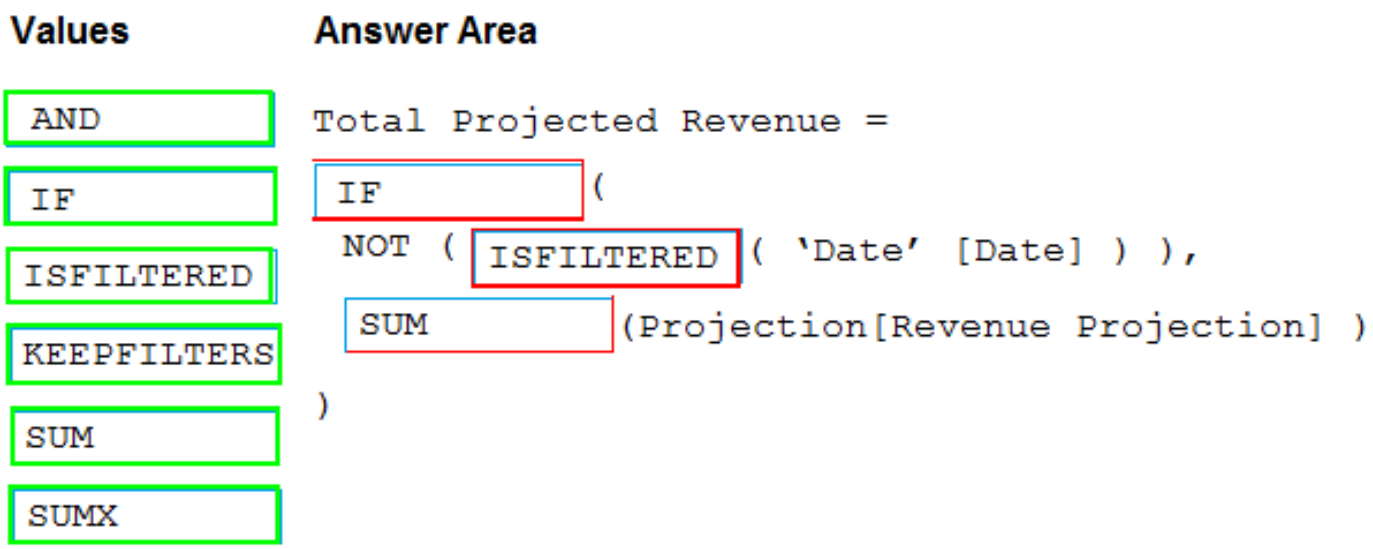
How should you complete the measure? To answer, drag the appropriate values to the correct

targets. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

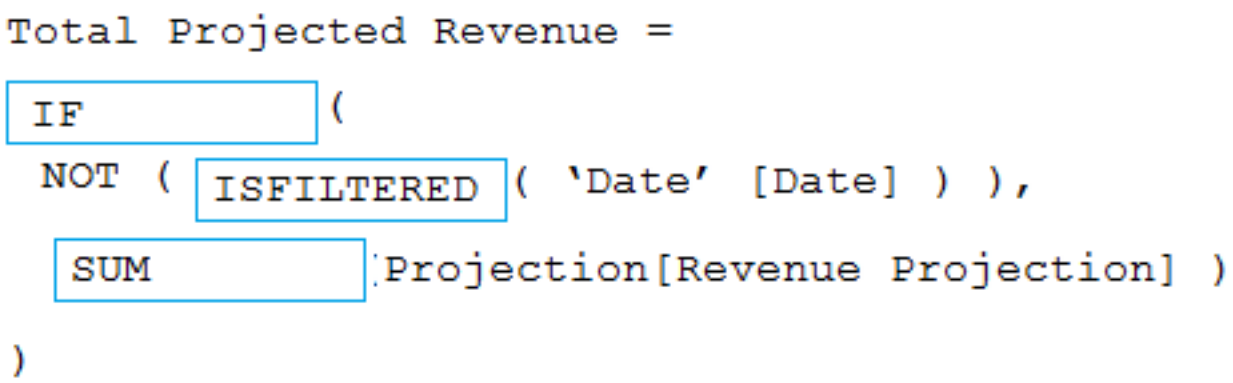


Answer:



Explanation:

Answer Area



Scenario: Revenue projections are set at the monthly level and summed to show projections for the quarter.

Box 1: IF

Box 2: ISFILTERED

ISFILTERED returns TRUE when columnName is being filtered directly. If there is no filter on the column or if the filtering happens because a different column in the same table or in a related table is being filtered then the function returns FALSE.

Box 3: SUM

Reference:

https://docs.microsoft.com/en-us/dax/isfiltered-function-dax

QUESTION NO: 73

Case Study

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Overview

Contoso, Ltd. is a manufacturing company that produces outdoor equipment. Contoso has quarterly board meetings for which financial analysts manually prepare Microsoft Excel reports, including profit and loss statements for each of the company's four business units, a company balance sheet, and net income projections for the next quarter.

Existing Environment

Data and Sources

Data for the reports comes from three sources. Detailed revenue, cost, and expense data comes from an Azure SQL database. Summary balance sheet data comes from Microsoft Dynamics 365 Business Central. The balance sheet data is not related to the profit and loss results, other than they both relate to dates.

Monthly revenue and expense projections for the next quarter come from a Microsoft SharePoint Online list. Quarterly projections relate to the profit and loss results by using the following shared dimensions: date, business unit, department, and product category.

Net Income Projection Data

Net income projection data is stored in a SharePoint Online list named Projections in the format shown in the following table.

MonthStartDate	Projection type	ProductCategory	Department	Projection
1-Apr-20	Revenue	Bikes	N/A	200,000
1-Apr-20	Revenue	Components	N/A	250,000
1-Apr-20	Revenue	Clothing	N/A	300,000
1-Apr-20	Revenue	Accessories	N/A	150,000
1-May-20	Revenue	Bikes	N/A	200,000
1-May-20	Revenue	Components	N/A	250,000
1-Apr-20	Expense	Bikes	Bike Manufacture	50,000
1-Apr-20	Expense	Bikes	Bike Sales	3,333

Revenue projections are set at the monthly level and summed to show projections for the quarter.

Balance Sheet Data

The balance sheet data is imported with final balances for each account per month in the format shown in the following table.

AccountCategory	Account	Month	Year	BalanceAmount
Current assets	Cash and cash equivalents	3	2020	20,289
Current assets	Inventories	3	2020	4,855
Long-term liabilities	Long-term debt	3	2020	50,207
Current assets	Cash and cash equivalents	2	2020	28,209
Current assets	Inventories	2	2020	5,845
Long-tern liabilities	Long-tern debt	2	2020	49,887
Current assets	Cash and cash equivalents	1	2020	25,567
Current assets	Inventories	1	2020	65,998
Long-term liabilities	Long-term debt	1	2020	46,124

There is always a row for each account for each month in the balance sheet data.

Dynamics 365 Business Central Data

Business Central contains a product catalog that shows how products roll up to product categories, which roll up to business units.

Revenue data is provided at the date and product level. Expense data is provided at the date and

department level.

Business Issues

Historically, it has taken two analysts a week to prepare the reports for the quarterly board meetings. Also, there is usually at least one issue each quarter where a value in a report is wrong because of a bad cell reference in an Excel formula. On occasion, there are conflicting results in the reports because the products and departments that roll up to each business unit are not defined consistently.

Requirements

Planned Changes

Contoso plans to automate and standardize the quarterly reporting process by using Microsoft Power BI. The company wants to how long it takes to populate reports to less than two days. The company wants to create common logic for business units, products, and departments to be used across all reports, including, but not limited, to the quarterly reporting for the board.

Technical Requirements

Contoso wants the reports and datasets refreshed with minimal manual effort.

The company wants to provide a single package of reports to the board that contains custom navigation and links to supplementary information.

Maintenance, including manually updating data and access, must be minimized as much as possible.

Security Requirements

The reports must be made available to the board from powerbi.com. An Azure Active Directory group will be used to share information with the board.

The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

Name	Data type	Example
Date	Date	4-Apr-2020
Month	Integer	20,2004
Month Name	Text	February
Quarter	Integer	20,202
Year	Integer	2,020

The definitions and attributes of products, departments, and business units must be consistent across all reports.

The board must be able to get the following information from the quarterly reports:

Revenue trends over time

Ending balances for each account

A comparison of expenses versus projections by quarter

Changes in long-term liabilities from the previous quarter

A comparison of quarterly revenue versus the same quarter during the prior year

Which two types of visualizations can be used in the balance sheet reports to meet the reporting goals? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A.
a line chart that shows balances by quarter filtered to account categories that are long-term liabilities.

B.
a clustered column chart that shows balances by date (x-axis) and account category (legend) without filters.

C.
a clustered column chart that shows balances by quarter filtered to account categories that are long-term liabilities.

D.
a pie chart that shows balances by account category without filters.

E.
a ribbon chart that shows balances by quarter and accounts in the legend.

Answer: A,C
Explanation:

QUESTION NO: 74

Case study

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Overview. General Overview

Northwind Traders is a specialty food import company.

The company recently implemented Power BI to better understand its top customers, products, and suppliers.

Overview. Business Issues

The sales department relies on the IT department to generate reports in Microsoft SQL Server Reporting Services (SSRS). The IT department takes too long to generate the reports and often misunderstands the report requirements.

Existing Environment. Data Sources

Northwind Traders uses the data sources shown in the following table.

Name	Type	Data size
Source1	Azure SQL database	2 GB
Source2	Microsoft Excel spreadsheet	5 MB

Source2 is exported daily from a third-party system and stored in Microsoft SharePoint Online.

Existing Environment. Customer Worksheet

Source2 contains a single worksheet named Customer Details. The first 11 rows of the worksheet are shown in the following table.

CustomerID	CustomerCRMID	CompanyName	Address	City	Region	PostalCode	Country	Phone
1	ALFKI	Alfreds Futterkiste	Obere Str. 57	Berlin	DE	12209	Germany	030-0074321
2	ANATR	Ana Trujillo Emparedados y helados	Avda. de la Constitución 2222	México D.F.	MX	5021	Mexico	(5) 555-4729
3	ANTON	Antonio Moreno Taquería	Mataderos 2312	México D.F.	MX	5023	Mexico	(5) 555-3932
4	AROUT	Around the Horn	120 Hanover Sq.	London	UK	WA1 1DP	UK	(171) 555-7788
5	BERGS	Berglunds snabbköp	Berguvsvägen 8	Luleå	SWE	S-958 22	Sweden	0921-12 34 65
6	BLAUS	Blauer See Delikatessen	Forsterstr. 57	Mannheim	DE	68306	Germany	0621-08460
7	BLONP	Blondesddsi père et fils	24, place Kléber	Strasbourg	FRA	67000	France	88.60.15.31
8	BOLID	Bólido Comidas preparadas	C/ Araquil, 67	Madrid	SPN	28023	Spain	(91) 555 22 82
9	BONAP	Bon app'	12, rue des Bouchers	Marseille	FRA	13008	France	91.24.45.40
10	BOTTM	Bottom-Dollar Markets	23 Tsawassen Blvd.	Tsawassen	BC	T2F 8M4	Canada	(604) 555-4729

All the fields in Source2 are mandatory.

The Address column in Customer Details is the billing address, which can differ from the shipping address.

Existing Environment. Azure SQL Database

Source1 contains the following table:

Orders

Products

Suppliers

Categories

Order Details

Sales Employees

The Orders table contains the following columns.

Name	Is nullable	Data type	Example value	Key
OrderID	No	Int	10248	Primary key
CustomerID	Yes	NCHAR	VINET	**Not applicable**
OrderDate	Yes	Date	2021-01-04	**Not applicable**
RequiredDate	Yes	Date	2021-02-01	**Not applicable**
ShippedDate	Yes	Date	2021-01-16	**Not applicable**
Freight	Yes	Decimal	32.38	**Not applicable**
ShipName	Yes	NVARCHAR	Vins et alcools Chevalier	**Not applicable**
ShipAddress	Yes	NVARCHAR	59 rue de l'Abbaye	**Not applicable**
ShipCity	Yes	NVARCHAR	Reims	**Not applicable**
ShipRegion	Yes	NVARCHAR	FRA	**Not applicable**
ShipPostalCode	Yes	NVARCHAR	511000	**Not applicable**
ShipCountry	Yes	NVARCHAR	France	**Not applicable**

The Order Details table contains the following columns.

Name	Is nullable	Data type	Example value	Key
OrderID	No	Int	10248	Foreign key to Orders
ProductID	No	Int	11	Foreign key to Products
UnitPrice	No	Decimal	14	**Not applicable**
Quantity	No	Smallint	12	**Not applicable**
Discount	No	Decimal	0.15	**Not applicable**

The address in the Orders table is the shipping address, which can differ from the billing address.

The Products table contains the following columns.

Name	Is nullable	Data type	Example value	Key
ProductID	No	Int	11	Primary key
ProductName	No	NVARCHAR	Queso Cabrales	**Not applicable**
SupplierID	Yes	Int	5	Foreign key to Suppliers
CategoryID	Yes	Int	4	Foreign key to Categories
QuantityPerUnit	Yes	NVARCHAR	1 kg pkg.	**Not applicable**
Discontinued	No	Bit	0	**Not applicable**

The Categories table contains the following columns.

Name	Is nullable	Data type	Example value	Key
CategoryID	No	int	4	Primary key
CategoryName	No	nvarchar	Dairy Products	**Not applicable**
Description	Yes	nvarchar	Cheeses	**Not applicable**

The Suppliers table contains the following columns.

Name	Is nullable	Data type	Example value	Key
SupplierID	No	Int	5	Primary key
CompanyName	No	NVARCHAR	Cooperativa de Quesos 'Las Cabras'	**Not applicable**
Address	Yes	NVARCHAR	Calle del Rosal 4	**Not applicable**
City	Yes	NVARCHAR	Oviedo	**Not applicable**
Region	Yes	NVARCHAR	Asturias	**Not applicable**
PostalCode	Yes	NVARCHAR	33007	**Not applicable**
Country	Yes	NVARCHAR	Spain	**Not applicable**
Phone	Yes	NVARCHAR	(98) 598 76 54	**Not applicable**

The Sales Employees table contains the following columns.

Name	Is nullable	Data type	Example value	Key
EmployeeID	No	Int	1	Primary key
LastName	No	NVARCHAR	Davolio	**Not applicable**
FirstName	No	NVARCHAR	Nancy	**Not applicable**
Title	Yes	NVARCHAR	Sales Representative	**Not applicable**
HireDate	Yes	Date	2015-02-01	**Not applicable**
Region	Yes	NVARCHAR	WA	**Not applicable**
Country	Yes	NVARCHAR	USA	**Not applicable**
EmailAddress	No	NVARCHAR	ndavolio@northwindtraders.com	**Not applicable**

Each employee in the Sales Employees table is assigned to one sales region. Multiple employees can be assigned to each region.

Requirements. Report Requirements

Northwind Traders requires the following reports:

Top Products

Top Customers

On-Time Shipping

The Top Customers report will show the top 20 customers based on the highest sales amounts in a selected order month or quarter, product category, and sales region.

The Top Products report will show the top 20 products based on the highest sales amounts sold in a selected order month or quarter, sales region, and product category. The report must also show which suppliers provide the top products.

The On-Time Shipping report will show the following metrics for a selected shipping month or quarter:

The percentage of orders that were shipped late by country and shipping region

Customers that had multiple late shipments during the last quarter

Northwind Traders defines late orders as those shipped after the required shipping date.

The warehouse shipping department must be notified if the percentage of late orders within the current month exceeds 5%.

The reports must show historical data for the current calendar year and the last three calendar years.

Requirements. Technical Requirements

Northwind Traders identifies the following technical requirements:

A single dataset must support all three reports.

The reports must be stored in a single Power BI workspace.

Report data must be current as of 7 AM Pacific Time each day.

The reports must provide fast response times when users interact with a visualization.

The data model must minimize the size of the dataset as much as possible, while meeting the report requirements and the technical requirements.

Requirements. Security Requirements

Access to the reports must be granted to Azure Active Directory (Azure AD) security groups only. An Azure AD security group exists for each department.

The sales department must be able to perform the following tasks in Power BI:

- Create, edit, and delete content in the reports.
- Manage permissions for workspaces, datasets, and report.
- Publish, unpublish, update, and change the permissions for an app.
- Assign Azure AD groups role-based access to the reports workspace.

Users in the sales department must be able to access only the data of the sales region to which they are assigned in the Sales Employees table.

Power BI has the following row-level security (RLS) Table filter DAX expression for the Sales Employees table.

[EmailAddress] = USERNAME()

RLS will be applied only to the sales department users. Users in all other departments must be able to view all the data.

You need to create the On-Time Shipping report. The report must include a visualization that shows the percentage of late orders.

Which type of visualization should you create?

A.
bar chart

B.
scatterplot

C.
pie chart

Answer: A
Explanation:

Scenario: The On-Time Shipping report will show the following metrics for a selected shipping month or quarter:

Note: Bar and column charts are some of the most widely used visualization charts in Power BI. They can be used for one or multiple categories. Both these chart types represent data with rectangular bars, where the size of the bar is proportional to the magnitude of data values.

The difference between the two is that if the rectangles are stacked horizontally, it is called a bar chart. If the rectangles are vertically aligned, it is called a column chart.

Reference:

https://www.pluralsight.com/guides/bar-and-column-charts-in-power-bi

QUESTION NO: 75 HOTSPOT

Case study

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6	BLAUS	Blauer See Delikatessen	Forsterstr. 57	Mannheim	DE	68306	Germany	0621-08460
7	BLONP	Blondesddsi père et fils	24, place Kléber	Strasbourg	FRA	67000	France	88.60.15.31
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Power BI has the following row-level security (RLS) Table filter DAX expression for the Sales Employees table.

[EmailAddress] = USERNAME()

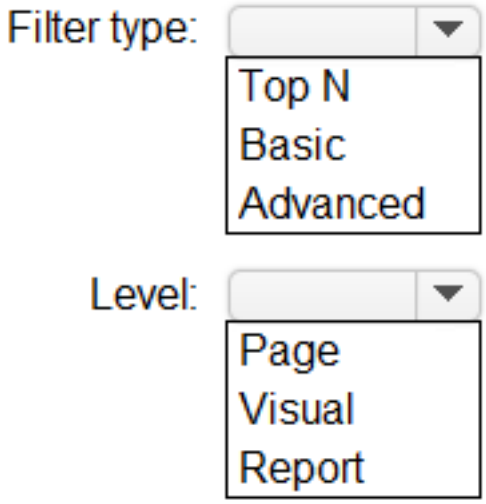
RLS will be applied only to the sales department users. Users in all other departments must be able to view all the data.

You need to create the Top Customers report.

Which type of filter should you use, and at which level should you apply the filter? To answer, select the appropriate options in the answer area.

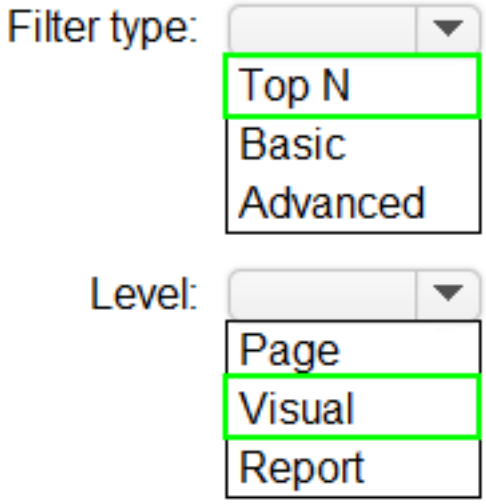
NOTE: Each correct selection is worth one point.

Answer Area



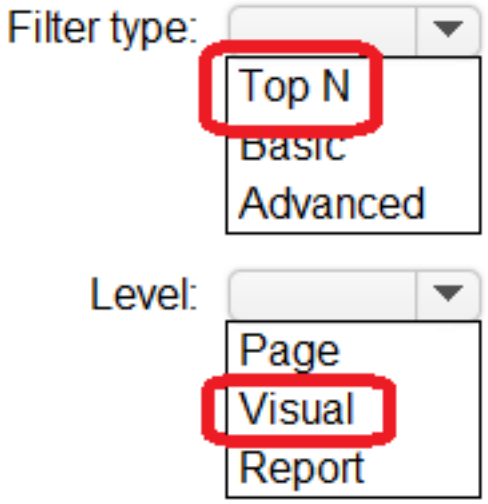
Answer:

Answer Area



Explanation:

Answer Area



Box 1: Top N

Scenario: The Top Customers report will show the top 20 customers based on the highest sales amounts in a selected order month or quarter, product category, and sales region.

Once you drag to SKU to Visual level filter you should get Top N option

Note: The two most common filter types: automatic and manual.

Then there are more advanced filters.

Box 2: Visual

Once you drag to SKU to Visual level filter you should get Top N option.

Reference:

https://powerbidocs.com/2020/01/21/power-bi-top-n-filters/

QUESTION NO: 76

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a clustered bar chart that contains a measure named Salary as the value and a field named Employee as the axis. Salary is present in the data as numerical amount representing US dollars.

You need to create a reference line to show which employees are above the median salary.

Solution: You create an average line by using the Salary measure.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

Instead create a percentile line by using the Salary measure and set the percentile to 50%.

Note: The 50th percentile is also known as the median or middle value where 50 percent of observations fall below.

Reference:

https://dash-intel.com/powerbi/statistical_functions_percentile.php

QUESTION NO: 77

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a

result, these questions will not appear in the review screen.

You have a clustered bar chart that contains a measure named Salary as the value and a field named Employee as the axis. Salary is present in the data as numerical amount representing US dollars.

You need to create a reference line to show which employees are above the median salary.

Solution: You create a percentile line by using the Salary measure and set the percentile to 50%.

Does this meet the goal?

A.
Yes

B.
No

Answer: A
Explanation:

The 50th percentile is also known as the median or middle value where 50 percent of observations fall below.

Reference:

https://dash-intel.com/powerbi/statistical_functions_percentile.php

QUESTION NO: 78

You have a Microsoft SharePoint Online site that contains several document libraries.

One of the document libraries contains manufacturing reports saved as Microsoft Excel files. All the manufacturing reports have the same data structure.

You need to use Power BI Desktop to load only the manufacturing reports to a table for analysis.

What should you do?

A.
Get data from a SharePoint folder, enter the site URL, and then select **Combine & Load**.

B.
Get data from a SharePoint list and enter the site URL. Select **Combine & Transform**, then filter by the folder path to the manufacturing reports library.

C.
Get data from a SharePoint folder and enter the site URL. Select **Combine & Transform**, then filter by the folder path to the manufacturing reports library.

D.
Get data from a SharePoint list, enter the site URL, and then select **Combine & Load**.

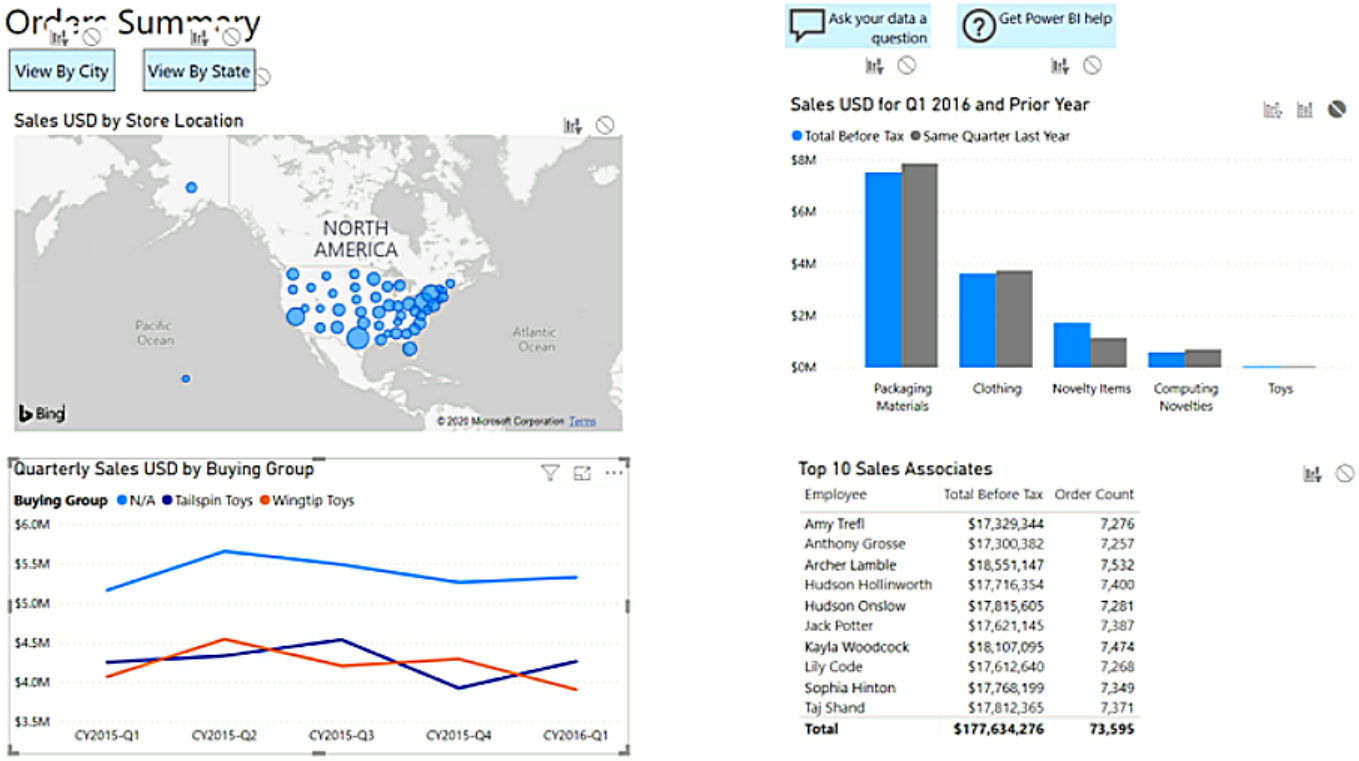
Answer: C
Explanation:

Reference:

https://www.c-sharpcorner.com/article/combine-and-transform-data-of-multiple-files-located-in-a-folder-in-power-bi/

QUESTION NO: 79 HOTSPOT

You have a report page that contains the visuals shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

Selecting a quarter on the line chart will **[answer choice]** the clustered column chart.

- cross-filter
- cross-highlight
- not affect

Selecting a data point on the Tailspin Toys line on the line chart will **[answer choice]** the map.

- cross-filter
- cross-highlight
- not affect

Answer:

Answer Area

Selecting a quarter on the line chart will **[answer choice]** the clustered column chart.

- cross-filter
- cross-highlight
- not affect

Selecting a data point on the Tailspin Toys line on the line chart will **[answer choice]** the map.

- cross-filter
- cross-highlight
- not affect

Explanation:

Answer Area

Selecting a quarter on the line chart will **[answer choice]** the clustered column chart.

- cross-filter
- cross-highlight
- not affect

Selecting a data point on the Tailspin Toys line on the line chart will **[answer choice]** the map.

- cross-filter
- cross-highlight
- not affect

Box 1: not affect

The column chart has the no impact icon highlighted, thus selecting data points on the line graph will have no affect on the column chart.

Box 2: cross-filter

The map has the cross-filter icon highlighted, thus selecting data points on the line graph will be cross filtered onto the map.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/service-reports-visual-interactions

https://docs.microsoft.com/en-us/power-bi/consumer/end-user-interactions

QUESTION NO: 80

You have a report that contains four pages. Each page contains slicers for the same four fields.

Users report that when they select values in a slicer on one page, the selections are not persisted on other pages.

You need to recommend a solution to ensure that users can select a value once to filter the results on all the pages.

What are two possible recommendations to achieve this goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A.
Replace the slicers with report-level filters.

B.
Sync the slicers across the pages.

C.
Create a bookmark for each slicer value.

D.
Replace the slicers with page-level filters.

E.
Replace the slicers with visual-level filters.

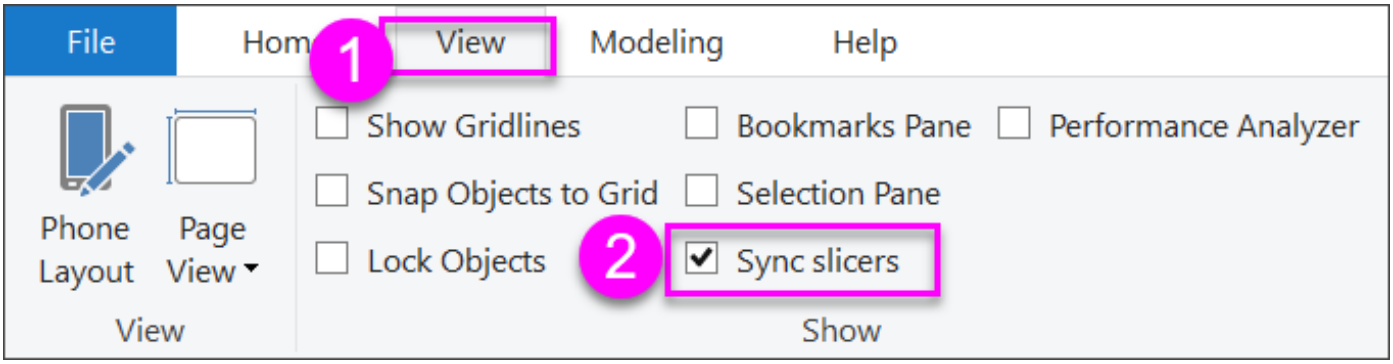
Answer: A,B
Explanation:

A: Add a report-level filter to filter an entire report.

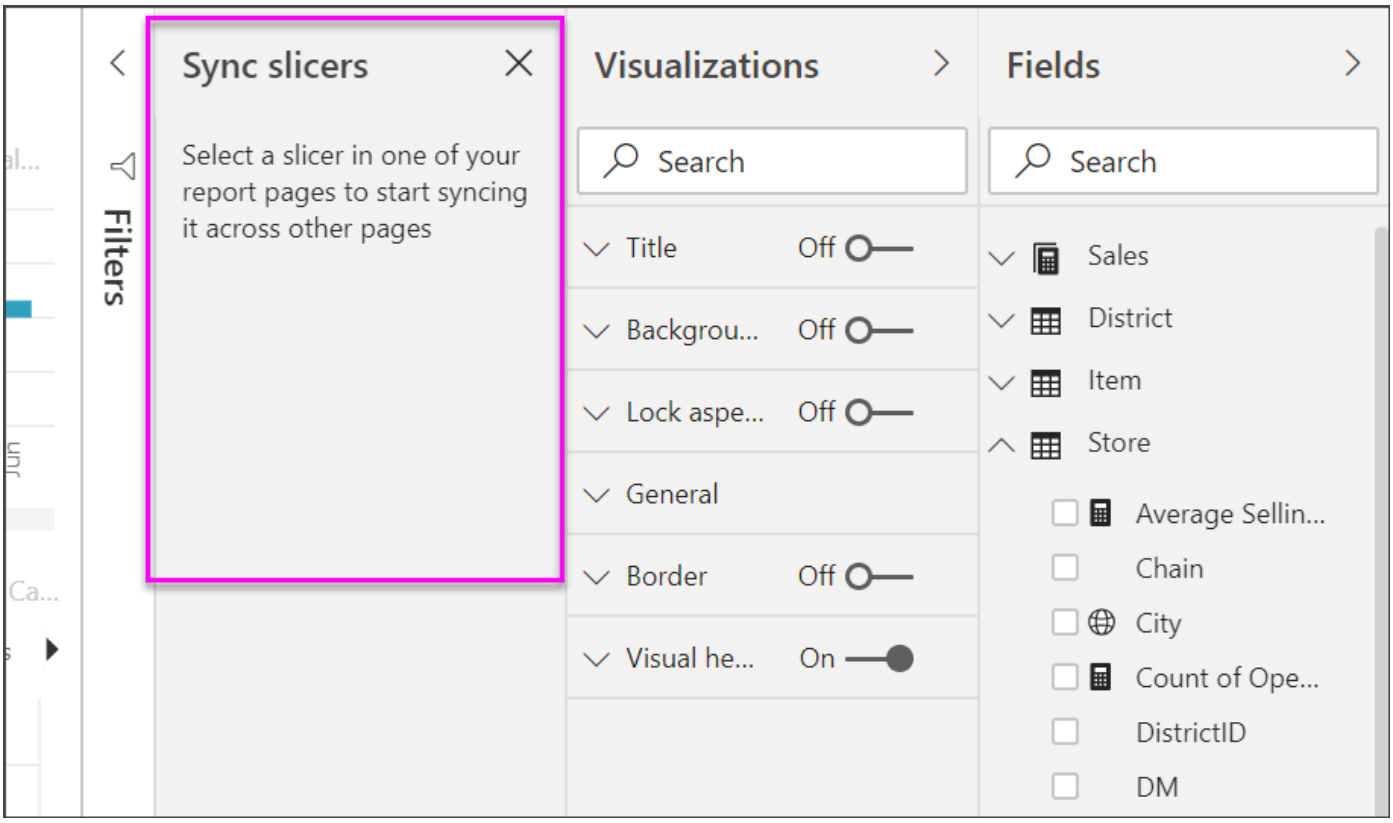
The visuals on the active page, and on all pages in the report, change to reflect the new filter.

B: You can sync a slicer and use it on any or all pages in a report.

1. On the Power BI Desktop View menu, select Sync slicers.



The Sync slicers pane appears between the Filters and Visualizations panes.



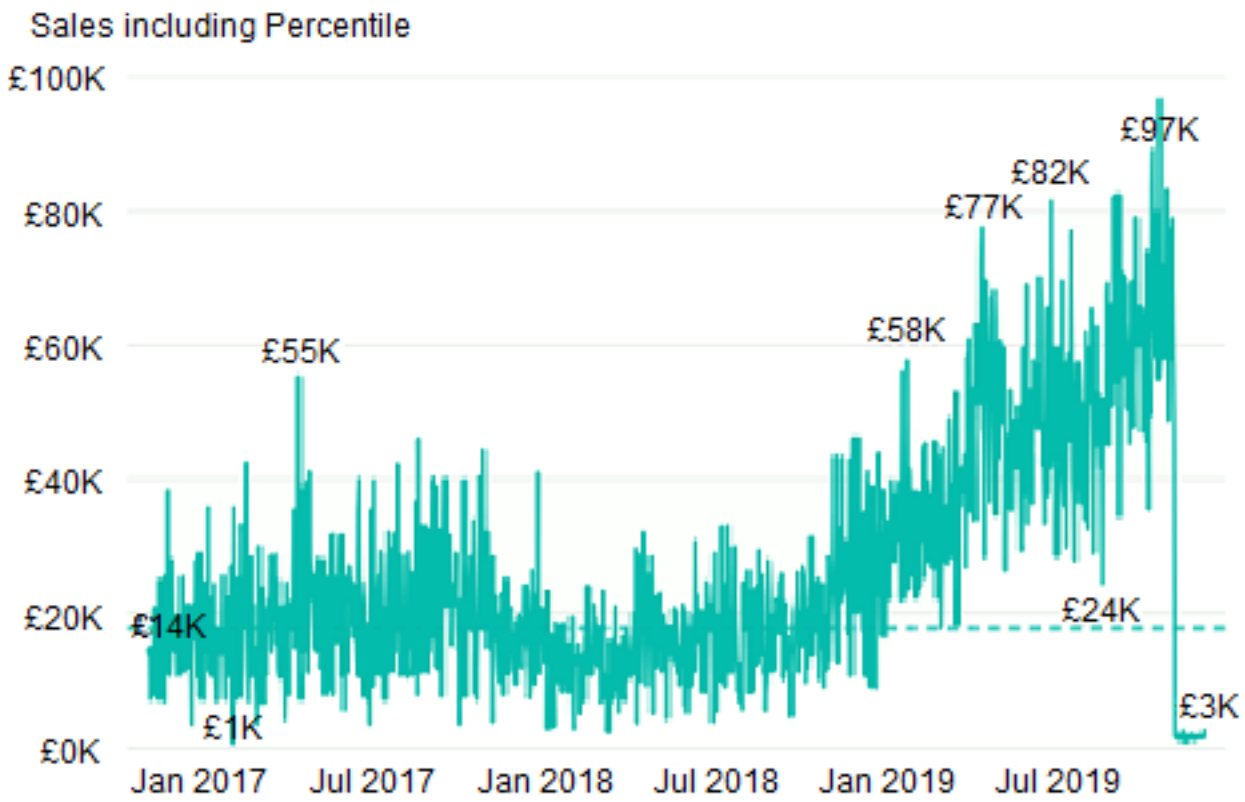
Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/power-bi-report-add-filter

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-slicers

QUESTION NO: 81

You plan to create the chart shown in the following exhibit.



How should you create the dashed horizontal line denoting the 40th percentile of daily sales for the period shown?

A.
Add a measure to the visual that uses the following DAX expression.

Measure1 = PERCENTILEX.INC (Sales,Sales[Total Sales],0.40)

B.
Add a new percentile line that uses Total Sales as the measure and 40% as the percentile.

C.
Create a horizontal line that has a fixed value of 24,000.

D.
Add a measure to the visual that uses the following DAX expression.

Measure1 = PERCENTILEX.EXC (Sales,Sales[Total Sales],0.40)

Answer: B

Explanation:

The analytics feature enables you to show percentiles across groups specified along a specific axis.

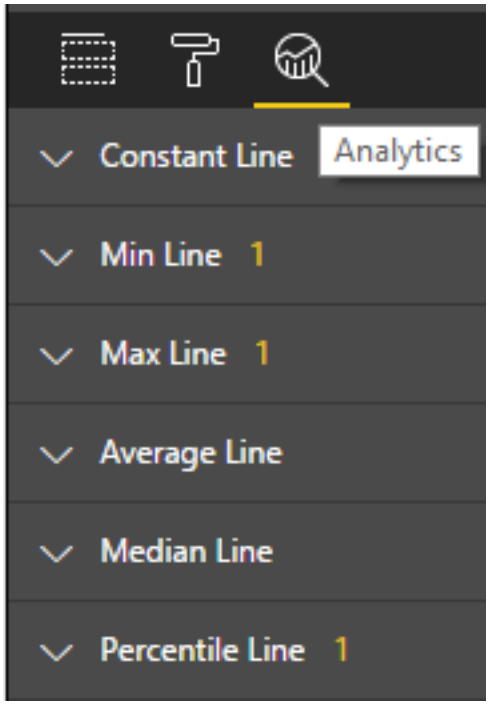
Example:

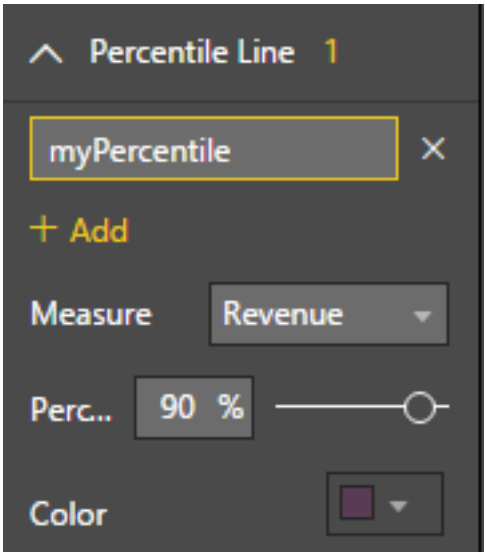
1. Click on the analytics tab

2. Select Percentile

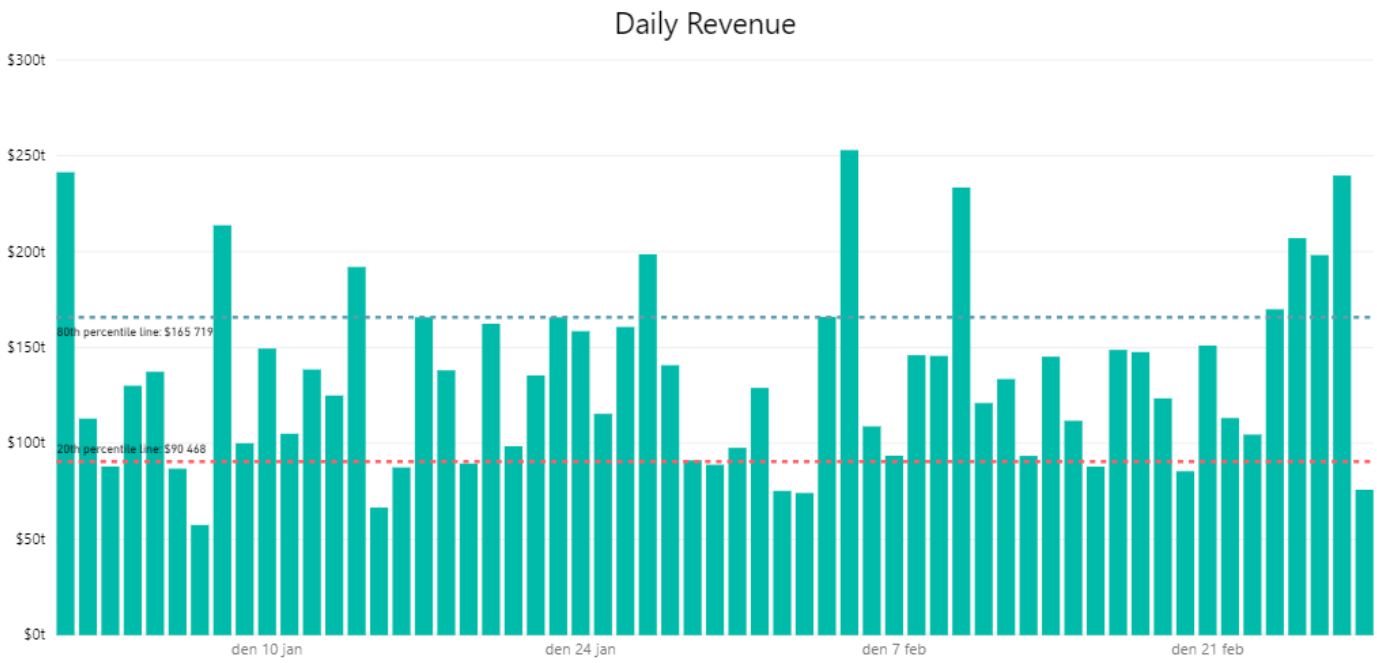
3. You can choose a specific percentile along with other formatting options.

4. Drag a date or non-numeric dimension into the Axis of a column chart





Add percentile lines to monitor daily revenue



Reference:

https://www.dash-intel.com/powerbi/statistical_functions_percentile.php

QUESTION NO: 82

You have a table that contains sales data and approximately 1,000 rows.

You need to identify outliers in the table.

Which type of visualization should you use?

A.
donut chart

B.
pie chart

C.
area chart

D.
scatter plot

Answer: D

Explanation:

Outliers are those data points that lie outside the overall pattern of distribution & the easiest way to detect outliers is though graphs. Box plots, Scatter plots can help detect them easily.

Reference:

https://towardsdatascience.com/this-article-is-about-identifying-outliers-through-funnel-plots-using-the-microsoft-power-bi-d7ad16ac9ccc

QUESTION NO: 83 HOTSPOT

You need to create a visual as shown in the following exhibit.

MonthName	Total Sales	Sales Last Year	% Growth to Last Year
January	£559,263.79	£144,365.51	74.19%
February	£583,915.29	£215,923.28	63.02%
March	£684,091.92	£211,347.46	69.11%
April	£957,686.49	£350,270.97	63.43%
May	£841,473.26	£310,708.65	63.08%
June	£876,911.71	£298,356.83	65.98%
July	£922,410.09	£348,435.28	62.23%
August	£1,002,219.24	£388,213.68	61.26%
September	£1,152,976.22	£407,595.76	64.65%
October	£1,262,647.67	£465,583.06	63.13%
November	£555,548.44	£555,548.44	0.00%
December	£553,615.45	£553,615.45	0.00%
Total	£9,952,759.56	£4,249,964.36	57.30%

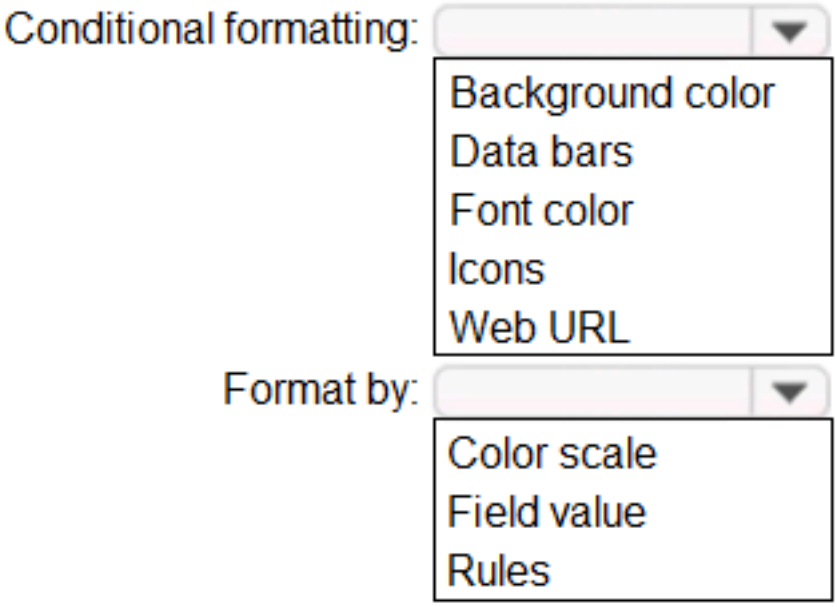
The indicator color for Total Sales will be based on % Growth to Last Year.

The solution must use the existing calculations only.

How should you configure the visual? To answer, select the appropriate options in the answer area.

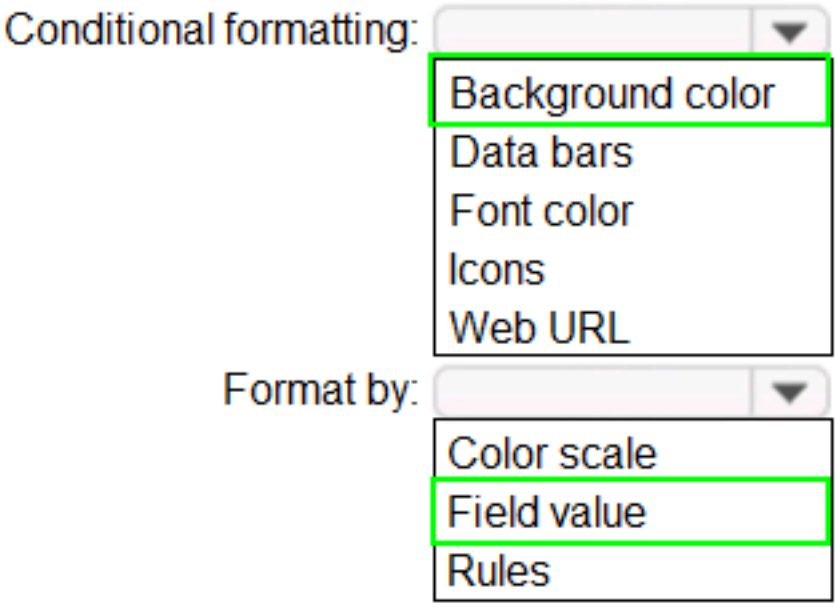
NOTE: Each correct selection is worth one point.

Answer Area



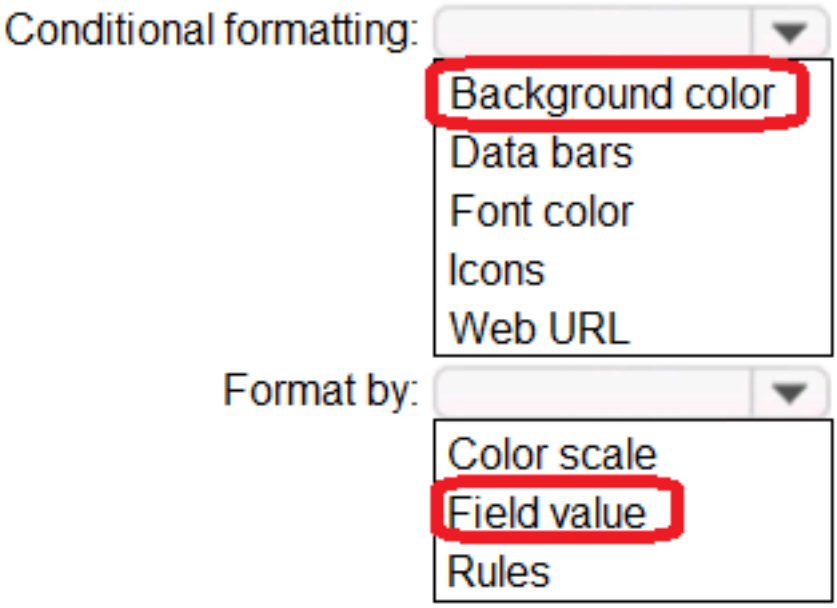
Answer:

Answer Area



Explanation:

Answer Area



Box 1: Background color

To format the Color column based on its field values, select Conditional formatting for the Color field, and then select Background color or Font color.

In the Background color or Font color dialog box, select Field value from the Format by drop-down field.

Box 2: Field value

With conditional formatting for tables in Power BI Desktop, you can specify customized cell colors, including color gradients, based on field values.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-conditional-table-formatting

QUESTION NO: 84

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a clustered bar chart that contains a measure named Salary as the value and a field named Employee as the axis. Salary is present in the data as numerical amount representing US dollars.

You need to create a reference line to show which employees are above the median salary.

Solution: You create a constant line and set the value to **.5**.

Does this meet the goal?

A.
Yes

B.
No

Answer: B

Explanation:

Instead create a percentile line by using the Salary measure and set the percentile to 50%.

Note: The 50th percentile is also known as the median or middle value where 50 percent of observations fall below.

Reference:

https://dash-intel.com/powerbi/statistical_functions_percentile.php

QUESTION NO: 85

You need to create a visualization that compares revenue and cost over time.

Which type of visualization should you use?

A.
stacked area chart

B.
donut chart

C.
line chart

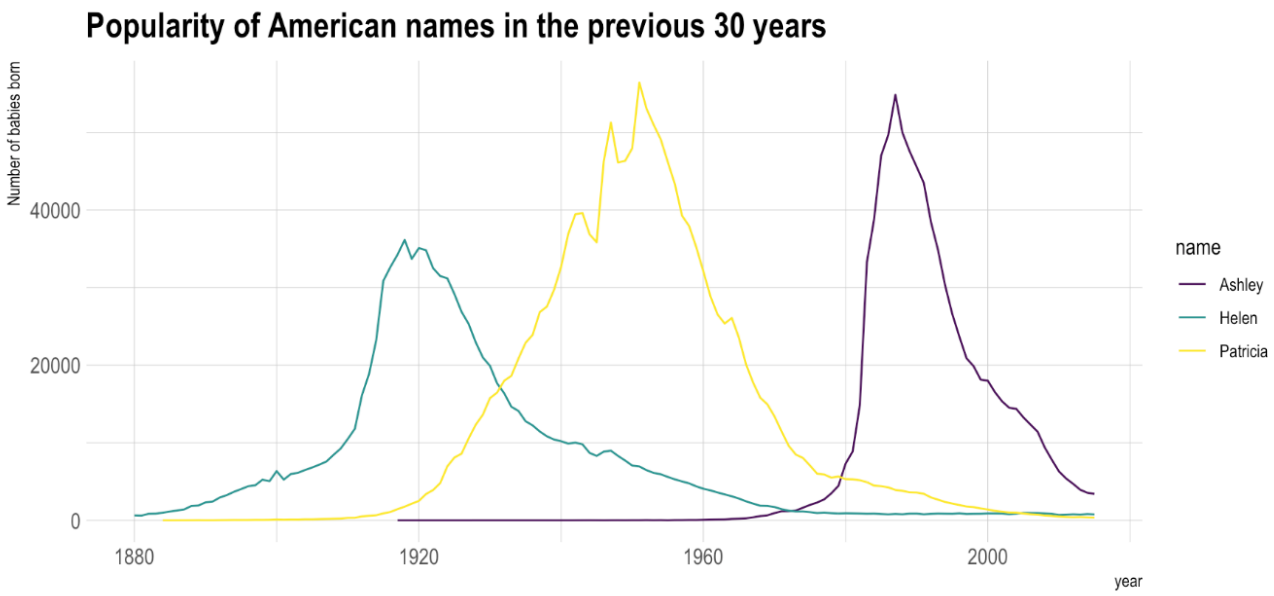
D.
waterfall chart

Answer: C

Explanation:

A line chart or line graph displays the evolution of one or several numeric variables. Data points are connected by straight line segments. A line chart is often used to visualize a trend in data over intervals of time – a time series – thus the line is often drawn chronologically.

Example:



Reference:

https://www.data-to-viz.com/graph/line.html

QUESTION NO: 86

You have a collection of reports for the HR department of your company.

You need to create a visualization for the HR department that shows a historic employee counts and predicts trends during the next six months.

Which type of visualization should you use?

A.
key influencers

B.
ribbon chart

C.
line chart

D.
scatter chart

Answer: C

Explanation:

The best data for forecasting is time series data or uniformly increasing whole numbers. The line chart has to have only one line.

Try forecasting: Try the new forecasting capabilities of Power View today on your own data or with the sample report available as part of the Power BI report samples. To view your own data, upload a workbook with a Power View time series line chart to Power BI for Office 365.

Reference:

https://powerbi.microsoft.com/en-us/blog/introducing-new-forecasting-capabilities-in-power-view-for-office-365

QUESTION NO: 87

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a clustered bar chart that contains a measure named Salary as the value and a field named Employee as the axis. Salary is present in the data as numerical amount representing US dollars.

You need to create a reference line to show which employees are above the median salary.

Solution: You create a median line by using the Salary measure.

Does this meet the goal?

A.
Yes

B.
No

Answer: A

Explanation:

The 50th percentile is also known as the median or middle value where 50 percent of observations fall below.

Reference:

https://dash-intel.com/powerbi/statistical_functions_median.php

QUESTION NO: 88

You are developing a sales report that will have multiple pages. Each page will answer a different business question.

You plan to have a menu page that will show all the business questions.

You need to ensure that users can click each business question and be directed to the page where the question is answered. The solution must ensure that the menu page will work when deployed to any workspace.

What should you include on the menu page?

A.
Create a text box for each business question and insert a link.

B.
Create a button for each business question and set the action type to Page Navigation.

C.
Create a Power Apps visual that contains a drop-down list. The drop-down list will contain the business questions.

Answer: B

Explanation:

Most apps contain multiple screens. Use the Back and Navigate function to change which screen is displayed. For example, set the OnSelect property of a button to a formula that includes a Navigate function if you want to show a different screen when a user selects that button.

Reference:

https://docs.microsoft.com/en-us/powerapps/maker/canvas-apps/functions/function-navigate

QUESTION NO: 89

You are developing a report page. Some users will navigate the report by using a keyboard, and some users will consume the report by using a screen reader.

You need to ensure that the users can consume the content on a report page in a logical order.

What should you configure in Microsoft Power BI Desktop?

A.
the tab order

B.
the layer order

C.
the bookmark order

D.
the X position

Answer: A
Explanation:

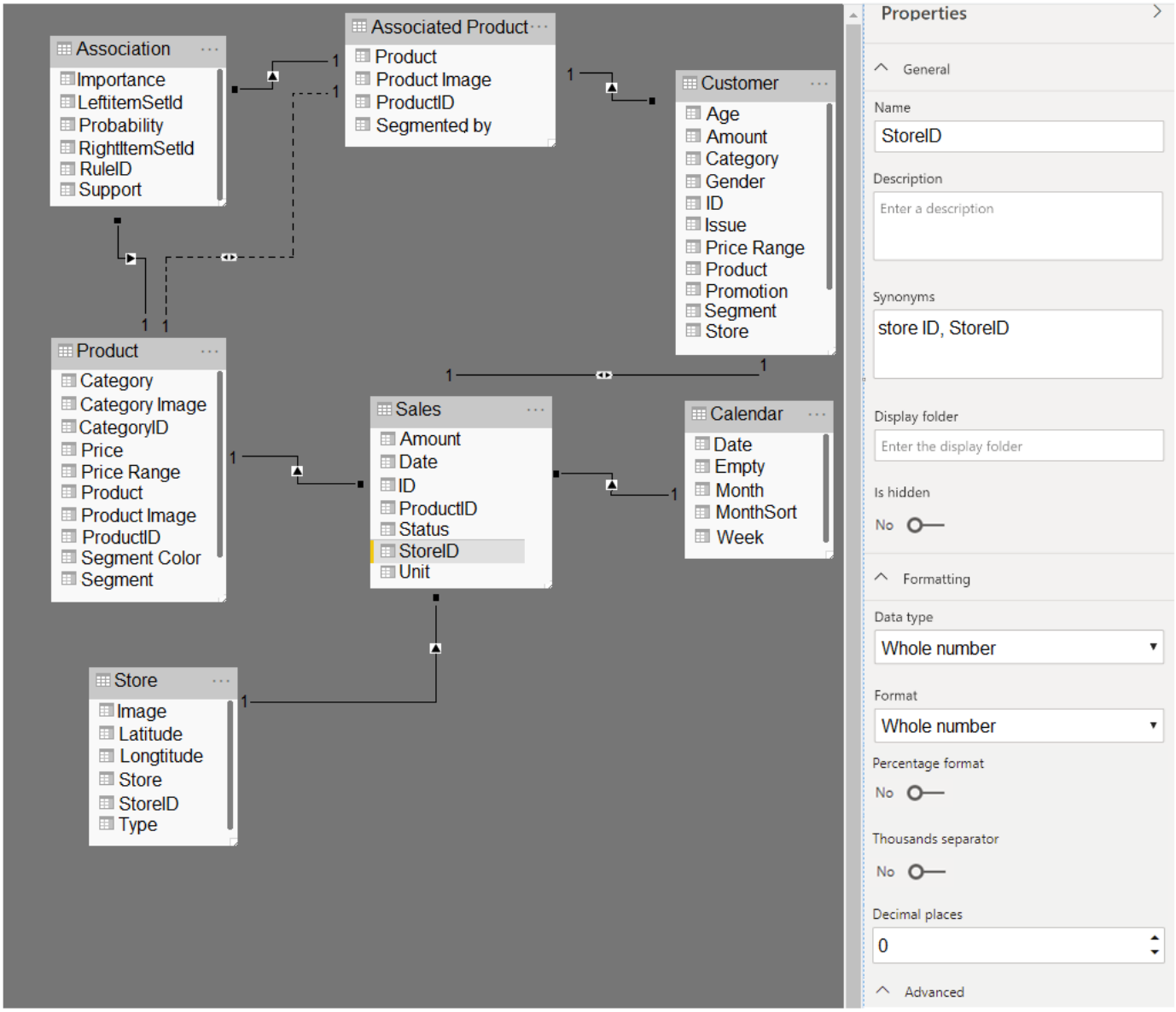
If you find yourself unable to navigate to an object or visual while using a keyboard, it may be because the report author has decided to hide that object from the tab order. Report authors commonly hide decorative objects from the tab order. If you find that you cannot tab through a report in a logical manner, you should contact the report author. Report authors can set the tab order for objects and visuals.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-accessibility-consuming-tools

QUESTION NO: 90 HOTSPOT

You have the Power BI data model shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

When a table visual is added to a blank report page and populated by using the StoreID field from the Sales table, a **[answer choice]** is displayed.

- distinct count of the StoreID values
- list of all the StoreID values
- list of the distinct StoreID values
- sum of the StoreID values

Adding a page filter of `Sales[StoreID] = 1` will filter the values displayed on the page from **[answer choice].**

- all the tables related to the Sales table
- only the Sales table
- only the Store table
- the Sales table and the Customer table

Answer:

Answer Area

When a table visual is added to a blank report page and populated by using the StoreID field from the Sales table, a **[answer choice]** is displayed.

- distinct count of the StoreID values
- list of all the StoreID values
- list of the distinct StoreID values
- sum of the StoreID values

Adding a page filter of `Sales[StoreID] = 1` will filter the values displayed on the page from **[answer choice].**

- all the tables related to the Sales table
- only the Sales table
- only the Store table
- the Sales table and the Customer table

Explanation:

Answer Area

When a table visual is added to a blank report page and populated by using the StoreID field from the Sales table, a **[answer choice]** is displayed.

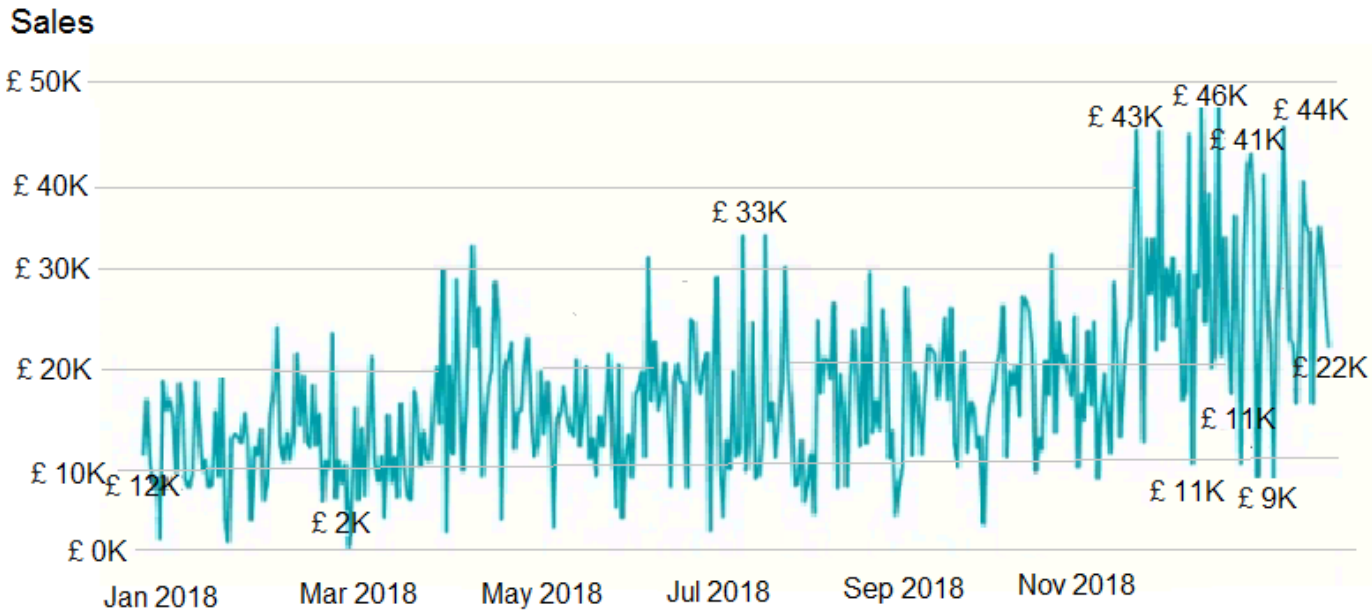
- distinct count of the StoreID values
- list of all the StoreID values
- list of the distinct StoreID values
- sum of the StoreID values

Adding a page filter of `Sales[StoreID] = 1` will filter the values displayed on the page from **[answer choice]**.

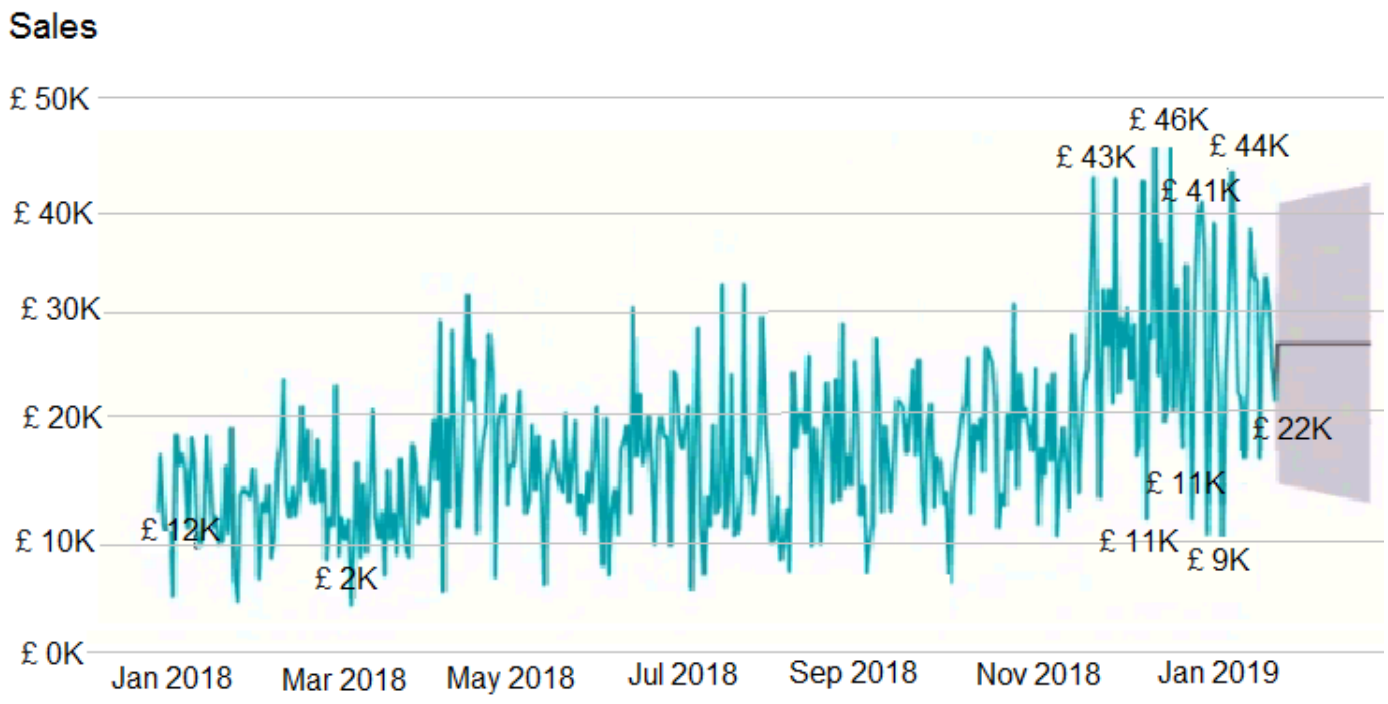
- all the tables related to the Sales table
- only the Sales table
- only the Store table
- the Sales table and the Customer table

QUESTION NO: 91

You have the visual shown in the Original exhibit. (Click the **Original** tab.)



You need to configure the visual as shown in the Modified exhibit. (Click the **Modified** tab.)



What should you add to the visual?

A.
an Average line

B.
a forecast

C.
a measure

D.
a trendline

Answer: B

Explanation:

Explore forecast results by adjusting the desired confidence interval or by adjusting outlier data to see how they affect results.

Reference:

https://powerbi.microsoft.com/fr-fr/blog/introducing-new-forecasting-capabilities-in-power-view-for-office-365/

QUESTION NO: 92

You have a Microsoft Power BI dashboard.

You need to ensure that consumers of the dashboard can give you feedback that will be visible to the other consumers of the dashboard.

What should you use?

A.
Mark as favorite

B.
Feedback

C.
Comments

D.
Subscribe

Answer: C
Explanation:

You can add a personal comment or start a conversation about a dashboard or report with your colleagues. The comment feature is just one of the ways a business user can collaborate with others.

Reference:

https://docs.microsoft.com/en-us/power-bi/consumer/end-user-comment

QUESTION NO: 93

You are creating a visual to show the ranking of product categories by sales revenue.

Your company's security policy states that you cannot send data outside of your Microsoft Power BI tenant.

Which approach provides the widest variety of visuals while adhering to the security policy?

A.
Use default or certified AppSource visuals.

B.
Use only default visuals.

C.
Use default visuals or visuals uploaded from a .pbiviz file.

D.
Use default or any AppSource visuals from the marketplace.

Answer: A
Explanation:

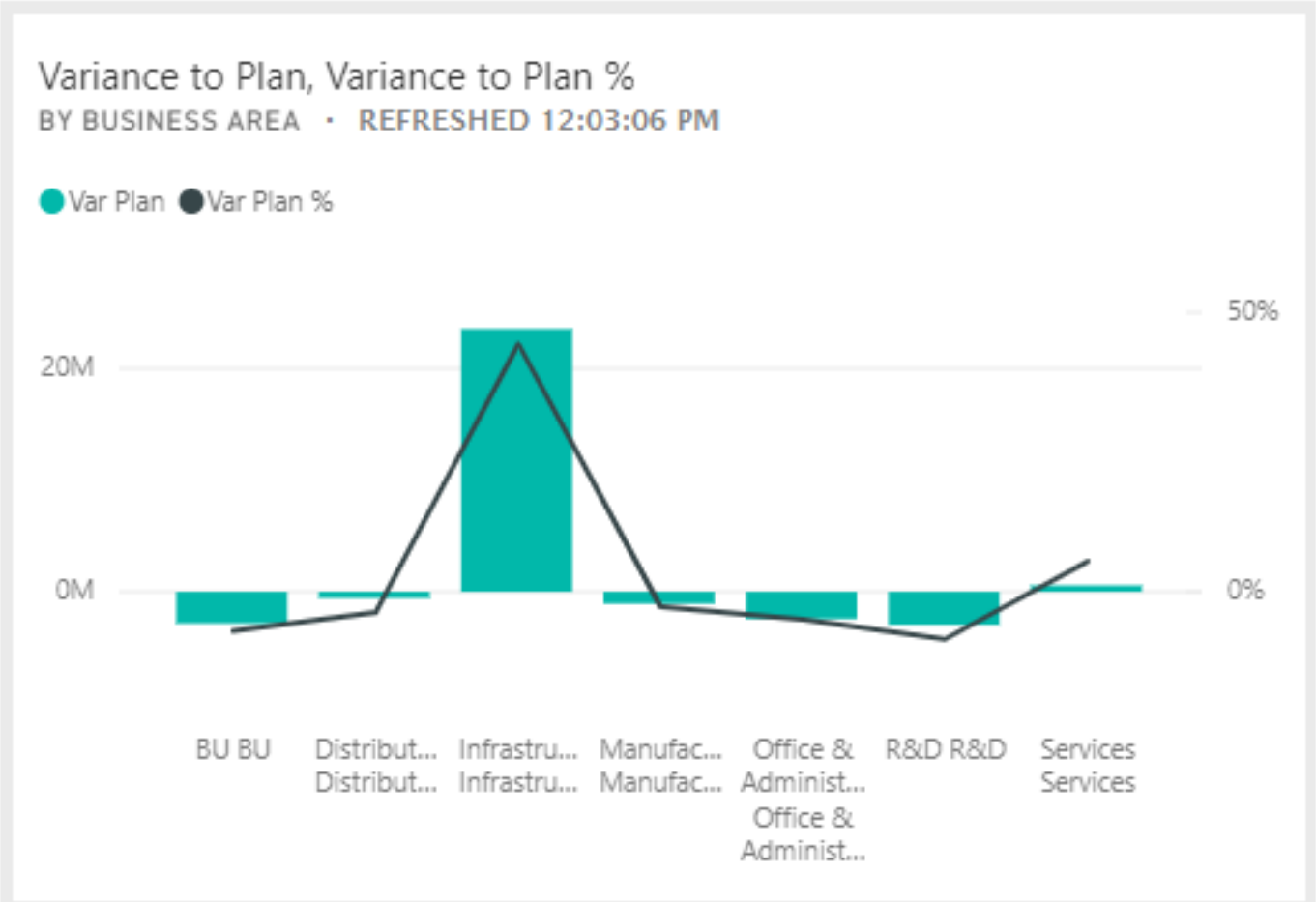
Reference:

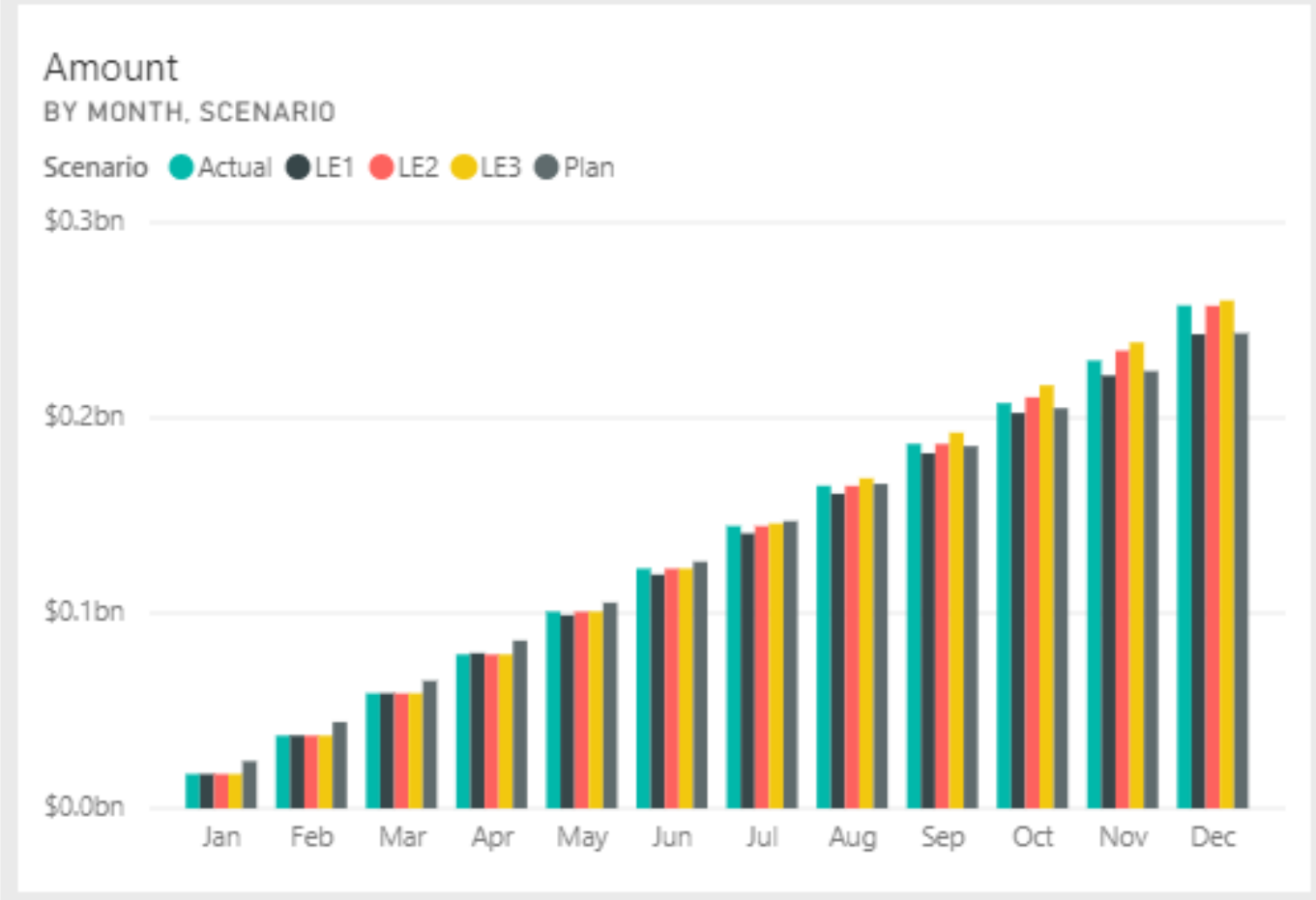
https://datasavvy.me/2019/02/28/what-data-is-being-sent-externally-by-power-bi-visuals/

QUESTION NO: 94

You have a Microsoft Power BI dashboard. The report used to create the dashboard uses an imported dataset from a Microsoft SQL Server data source.

The dashboard is shown in the exhibit. (Click the **Exhibit** tab.)


Variance to Plan, Variance to Plan %
BY BUSINESS AREA · REFRESHED 12:03:06 PM
Var Plan
Var Plan %
50%
20M
0M
0%
BU BU
Distribut... Distribut...
Infrastru... Infrastru...
Manufac... Manufac...
Office & Administ... Office & Administ...
R&D R&D
Services Services


Amount
BY MONTH, SCENARIO
Scenario
Actual
LE1
LE2
LE3
Plan
$0.3bn
$0.2bn
$0.1bn
$0.0bn
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

What occurred at 12:03:06 PM?

A.
The dashboard tile cache refreshed.

B.
A new transaction was added to the data source.

C.
A user pressed **F5**.

D.
A user added a comment to a tile.

Answer: A

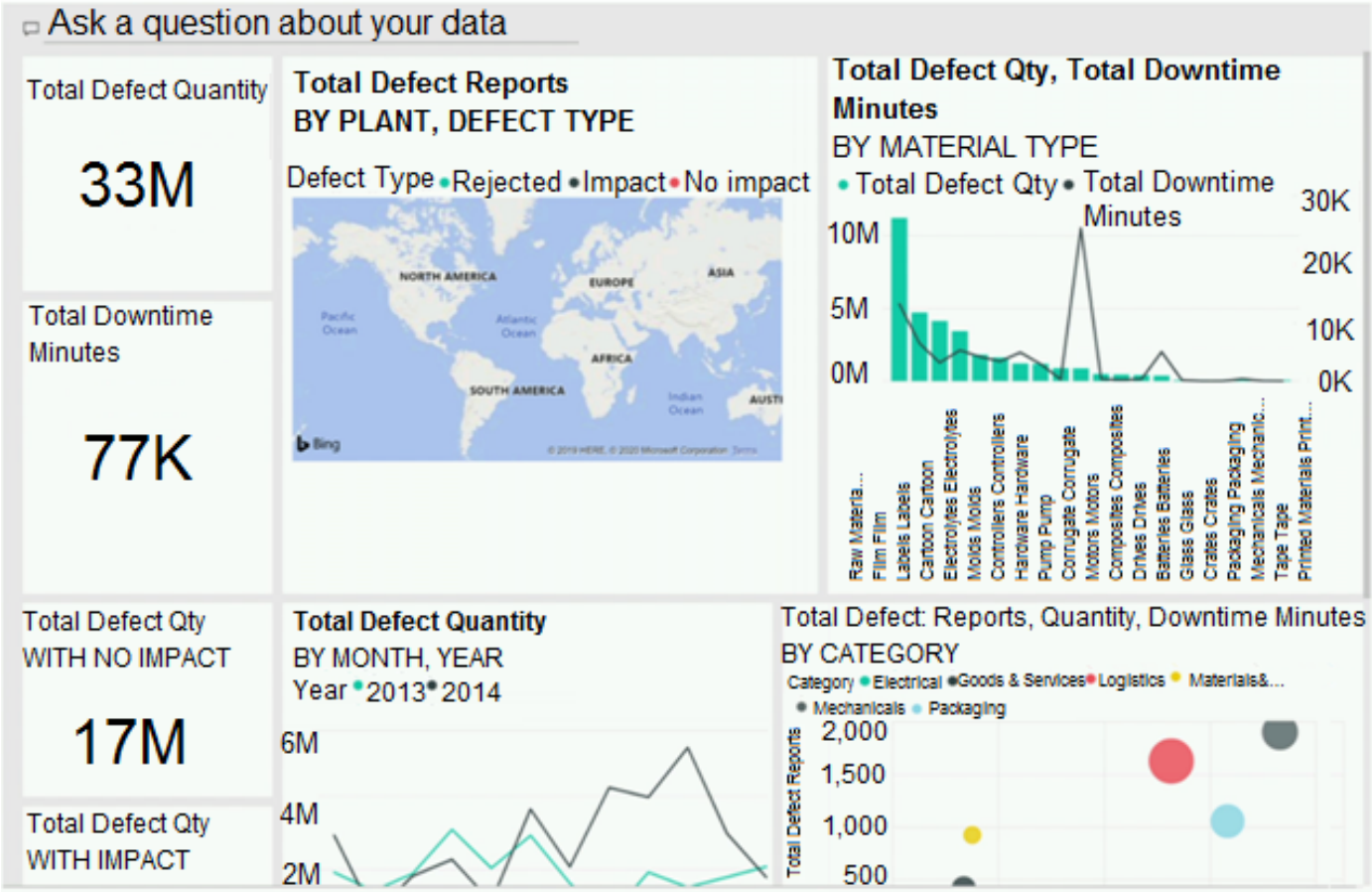
Explanation:

Reference:

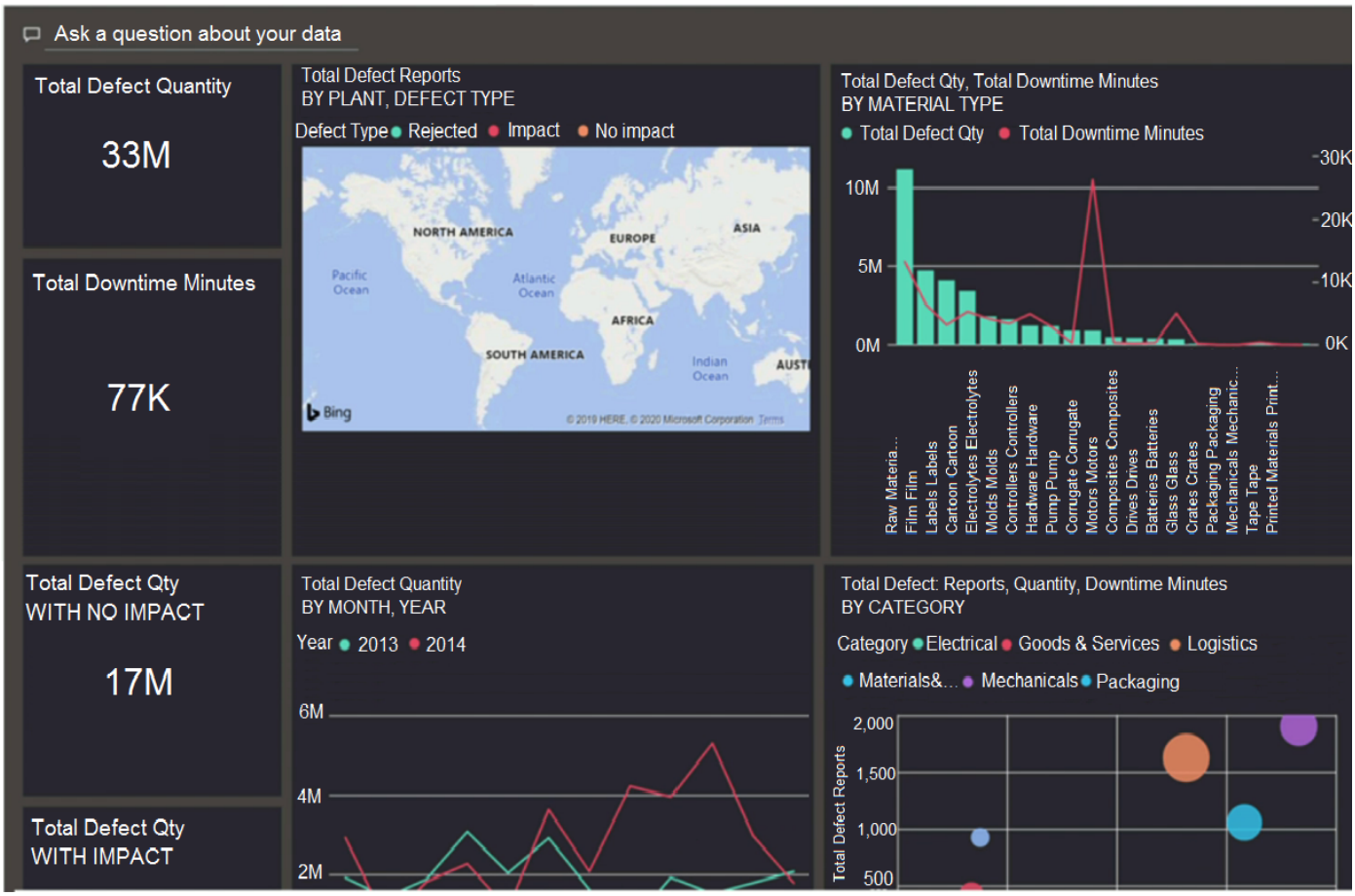
https://docs.microsoft.com/en-us/power-bi/connect-data/refresh-data

QUESTION NO: 95

You have a dashboard that contains tiles pinned from a single report as shown in the Original Dashboard exhibit. (Click the **Original Dashboard** tab.)



You need to modify the dashboard to appear as shown in the Modified Dashboard exhibit. (Click the **Modified Dashboard** tab.)



What should you do?

A.
Edit the details of each tile.

B.
Change the report theme.

C.
Change the dashboard theme.

D.
Create a custom CSS file.

Answer: B

Explanation:

With Power BI Desktop report themes, you can apply design changes to your entire report, such as using corporate colors, changing icon sets, or applying new default visual formatting. When you apply a report theme, all visuals in your report use the colors and formatting from your selected theme as their defaults.

Reference:

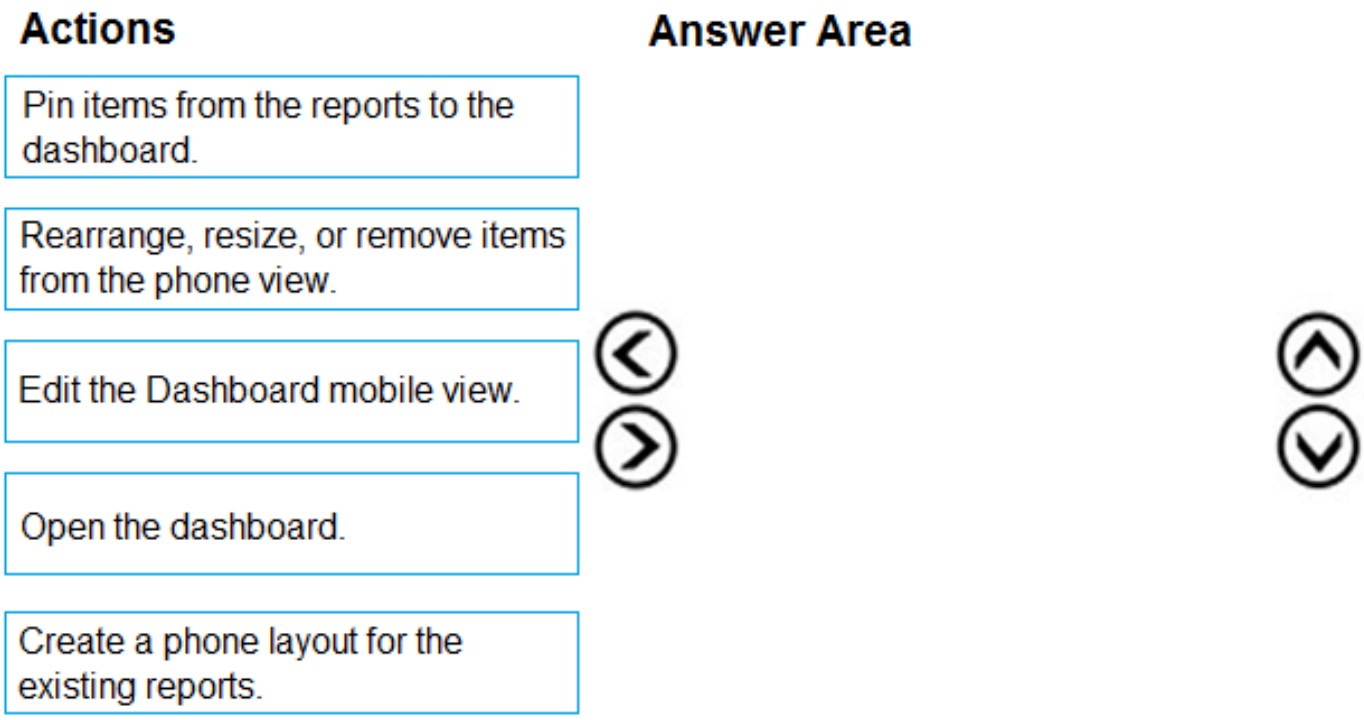
https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-report-themes

QUESTION NO: 96 DRAG DROP

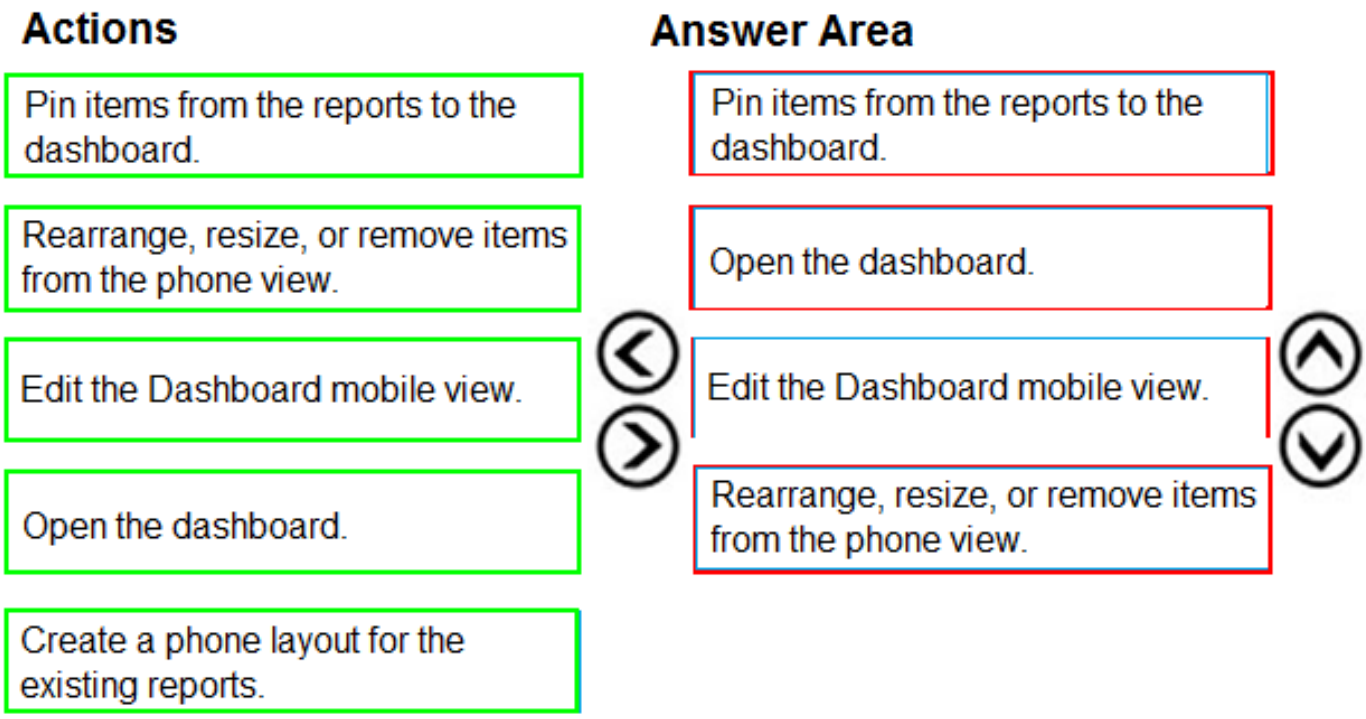
You are using existing reports to build a dashboard that will be viewed frequently in portrait mode on mobile phones.

You need to build the dashboard.

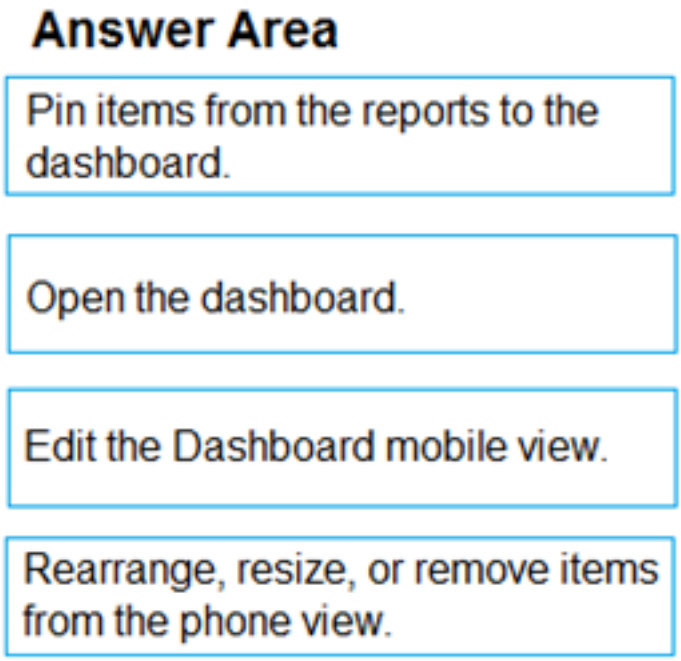
Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Answer:



Explanation:



In Power bi service you can optimize your power bi dashboard for mobile in 4 steps:

Reference:

https://devoworx.net/power-bi-dashboard-for-mobile/

QUESTION NO: 97

You build a report to help the sales team understand its performance and the drivers of sales.

The team needs to have a single visualization to identify which factors affect success.

Which type of visualization should you use?

A.
Line and clustered column chart

B.
Key influencers

C.
Q&A

D.
Funnel chart

Answer: B
Explanation:

The key influencers visual helps you understand the factors that drive a metric you're interested in. It analyzes your data, ranks the factors that matter, and displays them as key influencers.

The key influencers visual is a great choice if you want to:

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-influencers

QUESTION NO: 98 HOTSPOT

You have a dataset named Pens that contains the following columns:

Unit

Unit Price

Quantity Ordered

You need to create a visualization that shows the relationship between Unit Price and Quantity

Ordered. The solution must highlight orders that have a similar unit price and ordered quantity.

Which type of visualization and which feature should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

Visualization:
- A column chart of Quantity Ordered and Unit Price by year
- A line chart of Quantity Ordered and Unit Price by item
- A scatter plot of Quantity Ordered and Unit Price by item

Feature:
- Automatically find clusters
- Explain the decrease
- Find where the distribution is different

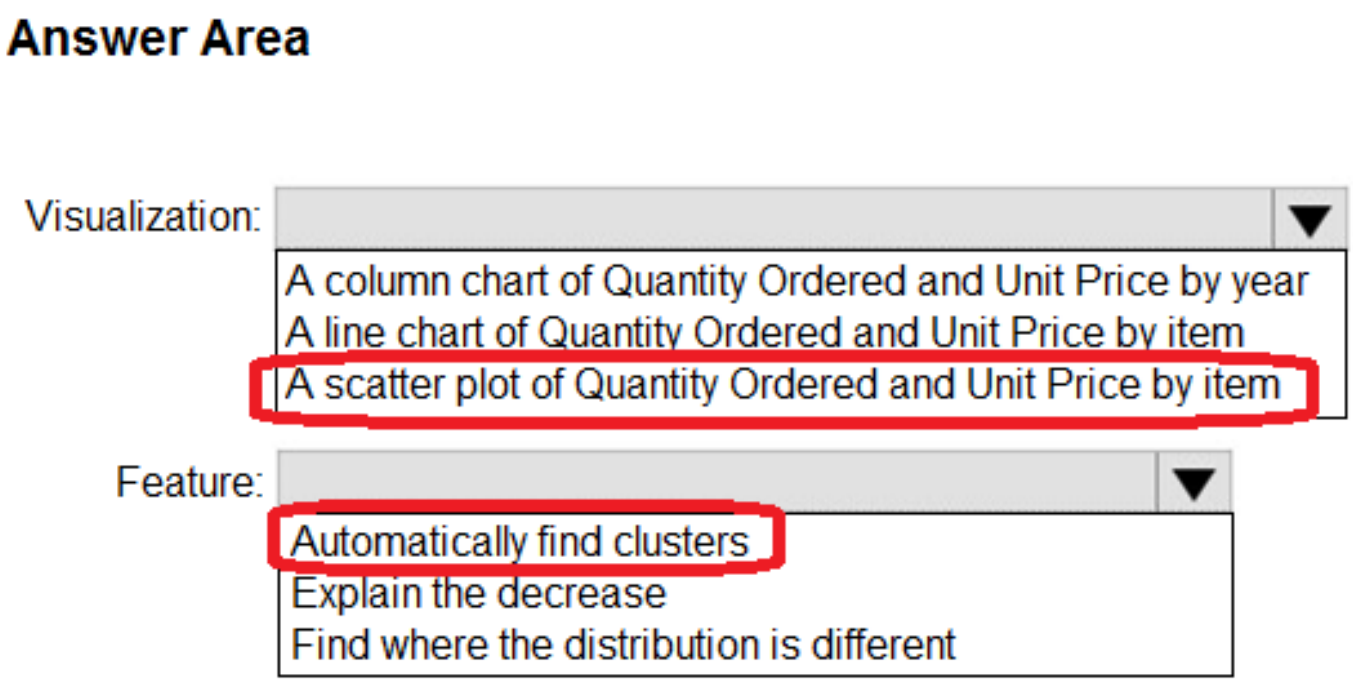
Answer:

Answer Area

Visualization:
- A column chart of Quantity Ordered and Unit Price by year
- A line chart of Quantity Ordered and Unit Price by item
- A scatter plot of Quantity Ordered and Unit Price by item

Feature:
- Automatically find clusters
- Explain the decrease
- Find where the distribution is different

Explanation:



Box 1: A scatter plot…

A scatter chart always has two value axes to show: one set of numerical data along a horizontal axis and another set of numerical values along a vertical axis. The chart displays points at the intersection of an x and y numerical value, combining these values into single data points. Power BI may distribute these data points evenly or unevenly across the horizontal axis. It depends on the data the chart represents.

Box 2: Automatically find clusters

Scatter charts are a great choice to show patterns in large sets of data, for example by showing linear or non-linear trends, clusters, and outliers.

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-scatter

QUESTION NO: 99

You use an R visual to produce a map of 500,000 customers. You include the values of CustomerID, Latitude, and Longitude in the fields sent to the visual. Each customer ID is unique.

In powerbi.com, when users load the visual, they only see some of the customers.

What is the cause of the issue?

A.
The visual was built by using a different version of R.

B.
The data comes from a Microsoft SQL Server source.

C.
The data is deduplicated.

D.
Too many records were sent to the visual.

Answer: D
Explanation:

R visuals in the Power BI service have a few limitations including:

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/service-r-visuals

QUESTION NO: 100

You have a line chart that shows the number of employees in a department over time.

You need to see the total salary costs of the employees when you hover over a data point.

What are two possible ways to achieve this goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A.
Add a salary to the tooltips.

B.
Add a salary to the visual filters.

C.

Add salary to the drillthrough fields.

Answer: A,B

Explanation:

A: When a visualization is created, the default tooltip displays the data point's value and category. There are many instances when customizing the tooltip information is useful. Customizing tooltips provides additional context and information for users viewing the visual. Custom tooltips enable you to specify additional data points that display as part of the tooltip.

B: Visual Filter applies to a single visual/tile on a report page. You can only see visual level filters selected visual on the report canvas.

Note: This question currently requires two answers. Answer A is 100% correct. Answer B is not correct but it is the next best answer. Should this question should only require one answer, Answer A.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-custom-tooltips

https://technovids.com/power-bi-filters/

QUESTION NO: 101

You have a report that contains a bar chart and a column chart. The bar chart shows customer count by customer segment. The column chart shows sales by month.

You need to ensure that when a segment is selected in the bar chart, you see which portion of the total sales for the month belongs to the customer segment.

How should the visual interactions be set on the column chart when the bar chart is selected?

A.
no impact

B.
highlight

C.
filter

Answer: C

Explanation:

Filters remove all but the data you want to focus on. Highlighting isn't filtering. It doesn't remove data, but instead highlights a subset of the visible data; the data that isn't highlighted remains visible but dimmed.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/service-reports-visual-interactions

QUESTION NO: 102 HOTSPOT

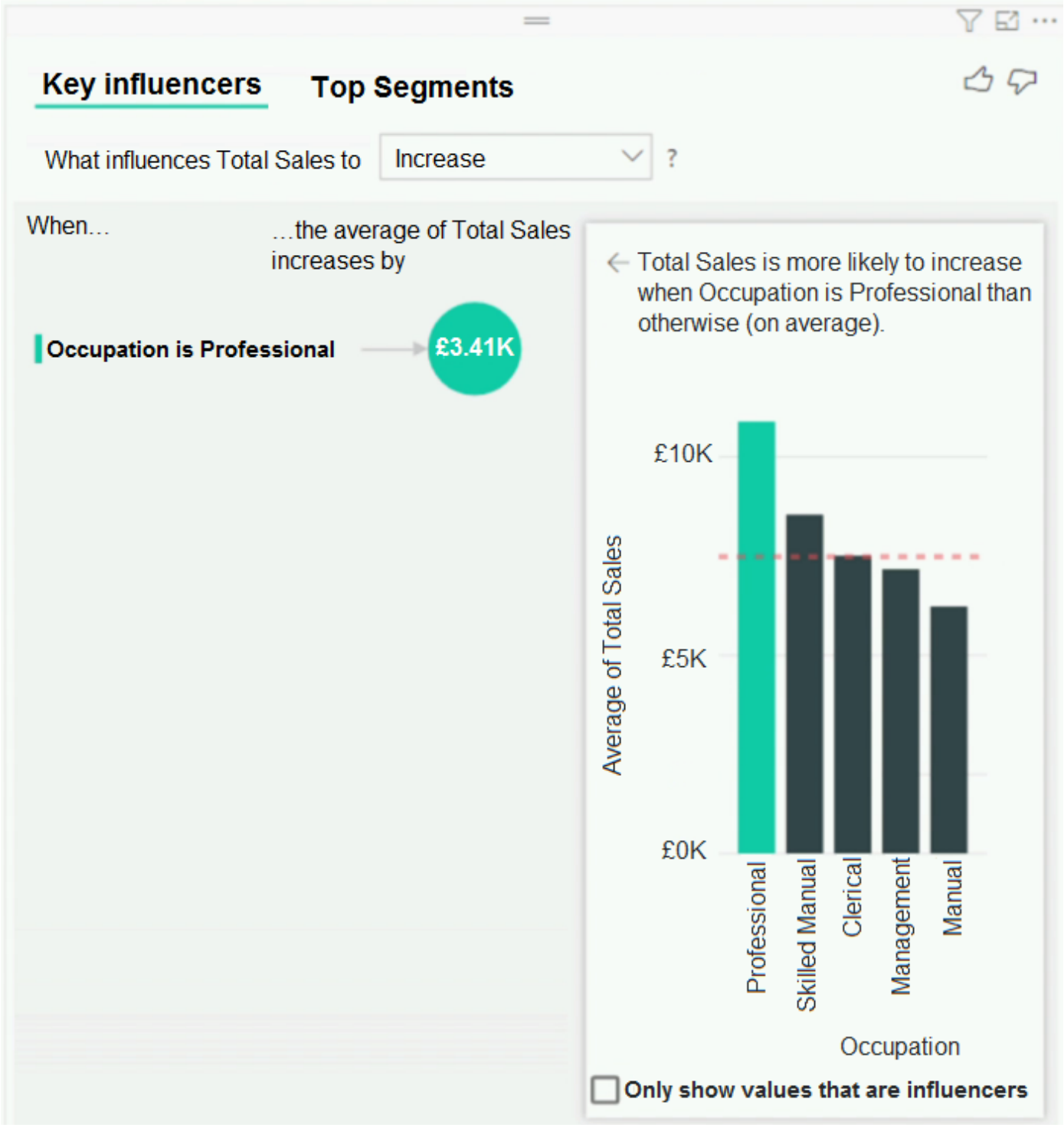
You have a table that contains the following three columns:

City

Total Sales

Occupation

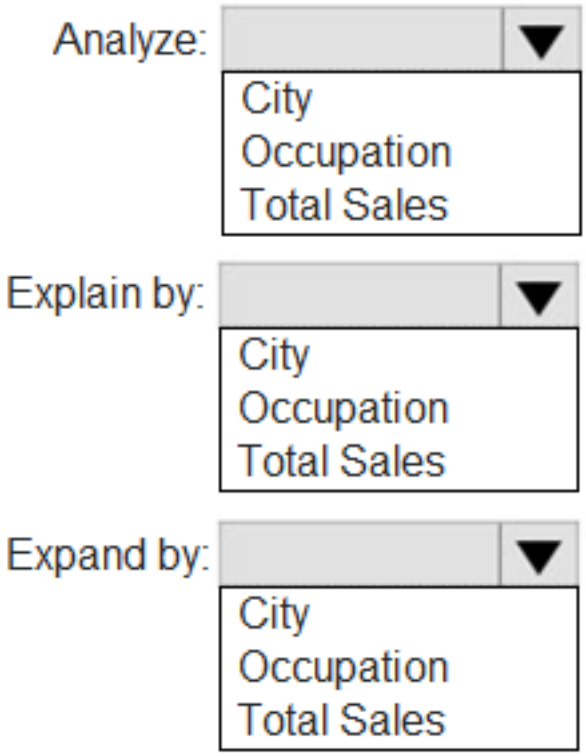
You need to create a key influencers visualization as shown in the exhibit. (Click the **Exhibit** tab.)



How should you configure the visualization? To answer, select the appropriate options in the answer area.

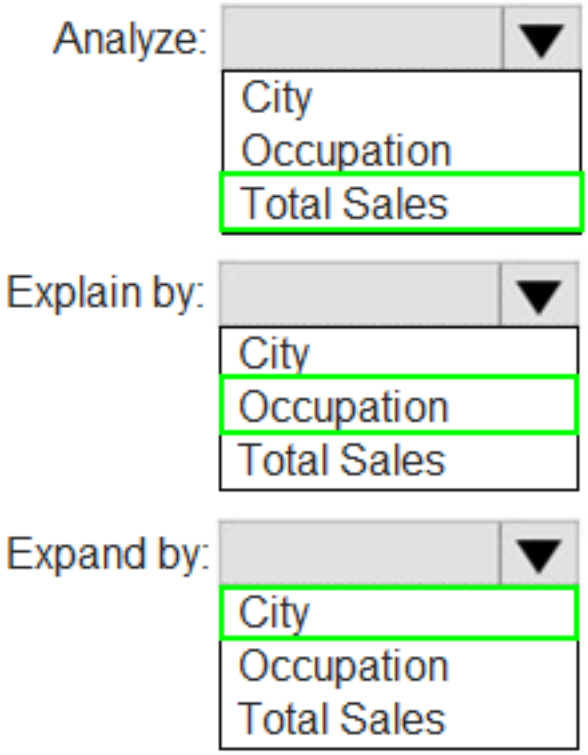
NOTE: Each correct selection is worth one point.

Answer Area



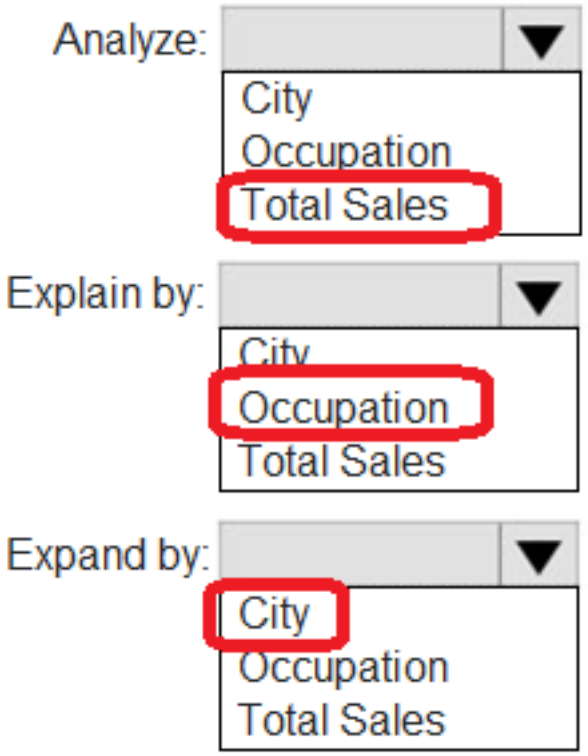
Answer:

Answer Area



Explanation:

Answer Area



Box 1: Total Sales

Box 2: Occupation

Box 3: City

You can use Expand By to add fields you want to use for setting the level of the analysis without looking for new influencers.

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-influencers

QUESTION NO: 103

You have the dataset shown in the following exhibit.

City	Sales Profit
Abbottsburg	$173,947
Absecon	$129,358
Accomac	$157,768
Aceitunas	$119,283
Airport Drive	$162,500
Akhiok	$259,554
Alcester	$127,040
Alden Bridge	$152,138
Alstead	$106,147
Amado	$136,718
Amanda Park	$117, 444
Andrix	$130,710
Annamoriah	$139,499
Antares	$147,562
Antonio	$113,056
Total	**$85,729,181**

You need to ensure that the visual shows only the 10 cities that have the highest sales profit.

What should you do?

A.
Add a Top N filter to the visual.

B.
Configure the Sales Profit measure to use the RANKX function.

C.
Add a calculated column to the table that uses the TOPN function. In the visual, replace Sales Profit with the calculated column.

D.
Add a calculated column to the table that returns the city name if the city is in the top 10, otherwise the calculated column will return "Not in Top 10". In the visual, replace Sales Profit with the calculated column.

Answer: A

Explanation:

Power BI Top N Filters are useful to display the top performing records, and Bottom N filters are helpful to display the least performing records. For example, we can display top or bottom 10 products by orders or sales.

Note:

Reference:

https://www.tutorialgateway.org/power-bi-top-10-filters/

QUESTION NO: 104

You have a Power BI report. The report contains visualizations that have interactions.

You need to identify which visualizations take the longest to complete.

What should you use?

A.
Query Diagnostics in Power BI

B.
Performance Analyzer in Power BI Desktop

C.
SQL Server Profiler

D.
Microsoft Edge DevTools

Answer: B

Explanation:

Use Power BI Desktop Performance Analyzer to optimize reports.

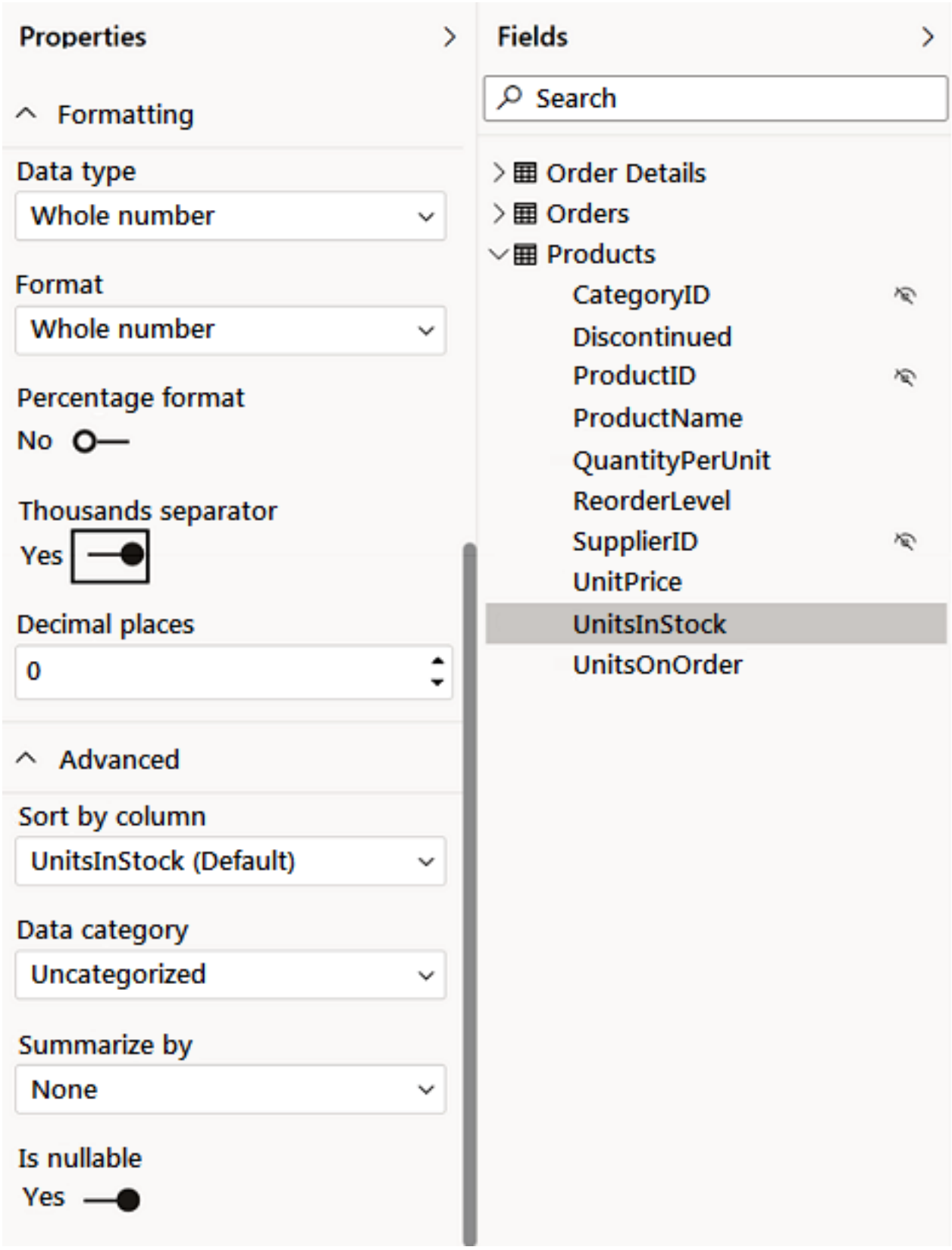
In Power BI Desktop you can find out how each of your report elements, such as visuals and DAX formulas, are performing. Using the Performance Analyzer, you can see and record logs that measure how each of your report elements performs when users interact with them, and which aspects of their performance are most (or least) resource intensive.

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-performance-analyzer

QUESTION NO: 105 HOTSPOT

You have a column named UnitsInStock as shown in the following exhibit.



UnitsInStock has 75 non-null values, of which 51 are unique.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

When a table visual is created in a report and UnitsInStock is added to the values, there will be **[answer choice]** in the table.

- 0 rows
- 1 row
- 51 rows
- 75 rows

Changing the Summarize by setting of the UnitsInStock column, and then adding the column to a table visual, will **[answer choice]** the number of rows in the table visual.

- maintain
- reduce
- increase

Answer:

Answer Area

When a table visual is created in a report and UnitsInStock is added to the values, there will be **[answer choice]** in the table.

- 0 rows
- 1 row
- 51 rows
- 75 rows

Changing the Summarize by setting of the UnitsInStock column, and then adding the column to a table visual, will **[answer choice]** the number of rows in the table visual.

- maintain
- reduce
- increase

Explanation:

Answer Area

When a table visual is created in a report and UnitsInStock is added to the values, there will be **[answer choice]** in the table.

0 rows
1 row
51 rows
75 rows

Changing the Summarize by setting of the UnitsInStock column, and then adding the column to a table visual, will **[answer choice]** the number of rows in the table visual.

maintain
reduce
increase

Box 1: 75

Box 2: reduce

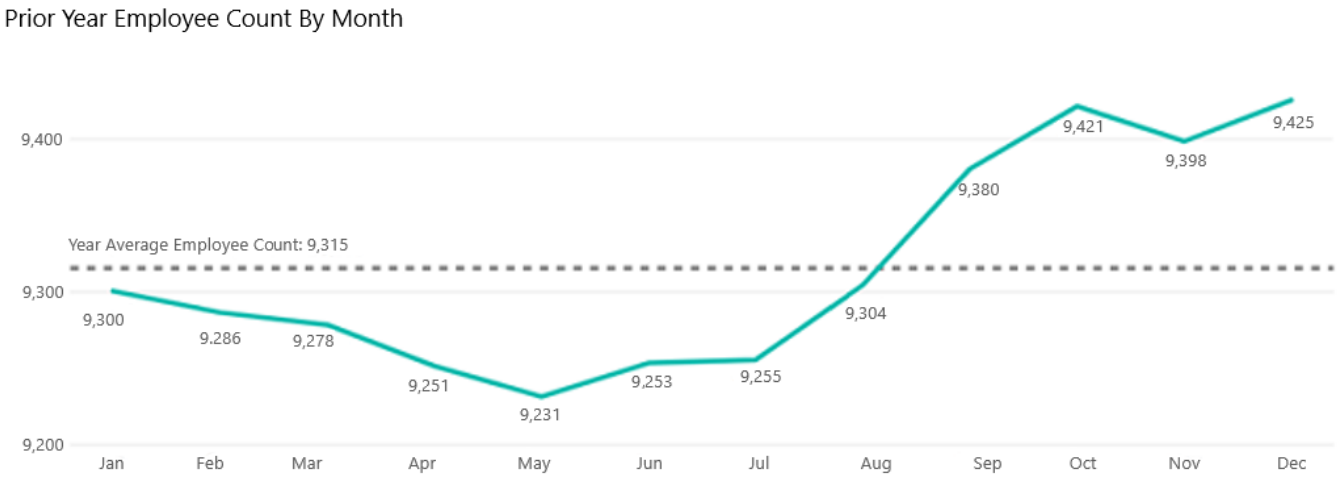
They reduce from the number of values (75), to the number of unique values (51).

Reference:

https://docs.microsoft.com/en-us/power-bi/create-reports/desktop-show-items-no-data

QUESTION NO: 106 HOTSPOT

You are creating a line chart in a Power BI report as shown in the following exhibit.



Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

The dashed line representing the Year Average Employee Count was created by using **[answer choice]**

- a trend line
- a secondary axis
- an average reference line
- two measures in the Values bucket

To enable users to drill down to weeks or days, add the Weeks and Days field to the **[answer choice]** bucket.

- Axis
- Values
- Legend
- Secondary values

Answer:

Answer Area

The dashed line representing the Year Average Employee Count was created by using **[answer choice]**

- a trend line
- a secondary axis
- an average reference line
- two measures in the Values bucket

To enable users to drill down to weeks or days, add the Weeks and Days field to the **[answer choice]** bucket.

- Axis
- Values
- Legend
- Secondary values

Explanation:

Answer Area

The dashed line representing the Year Average Employee Count was created by using **[answer choice]**

- a trend line
- a secondary axis
- an average reference line
- two measures in the Values bucket

To enable users to drill down to weeks or days, add the Weeks and Days field to the **[answer choice]** bucket.

- Axis
- Values
- Legend
- Secondary values

Reference:

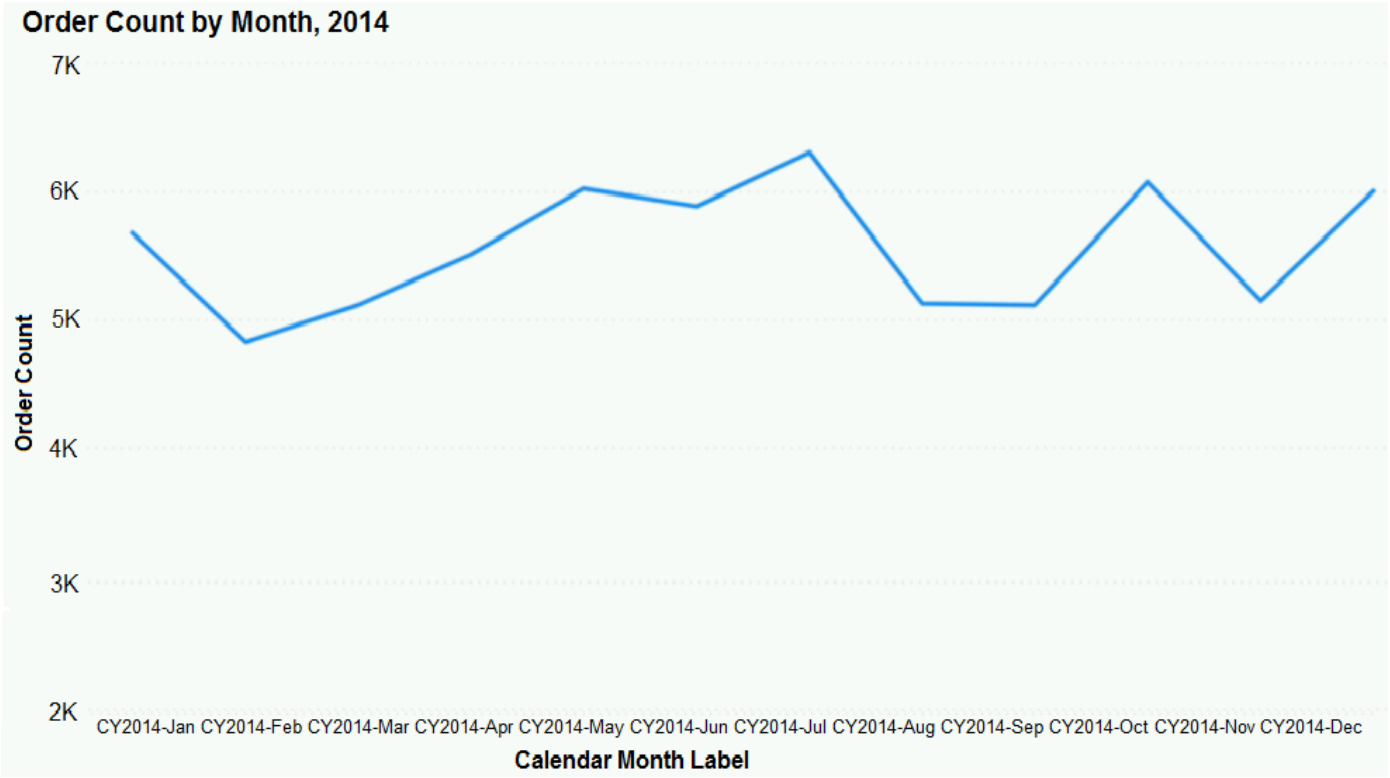
https://docs.microsoft.com/en-us/power-bi/transform-model/desktop-analytics-pane

https://sqldusty.com/2015/10/14/drill-down-with-power-bi-visualizations/

Topic 4, Analyze the Data

QUESTION NO: 107 DRAG DROP

You have the line chart shown in the exhibit. (Click the **Exhibit** tab.)



You need to modify the chart to meet the following requirements:

Identify months that have order counts above the mean.

Display the mean monthly order count.

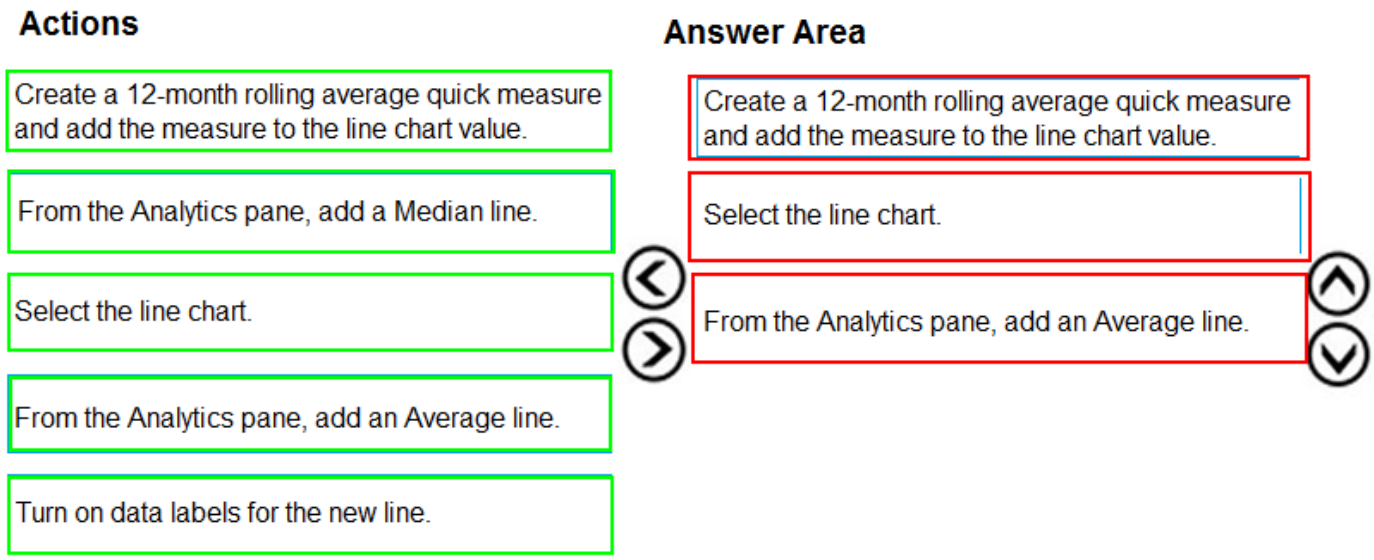
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Actions

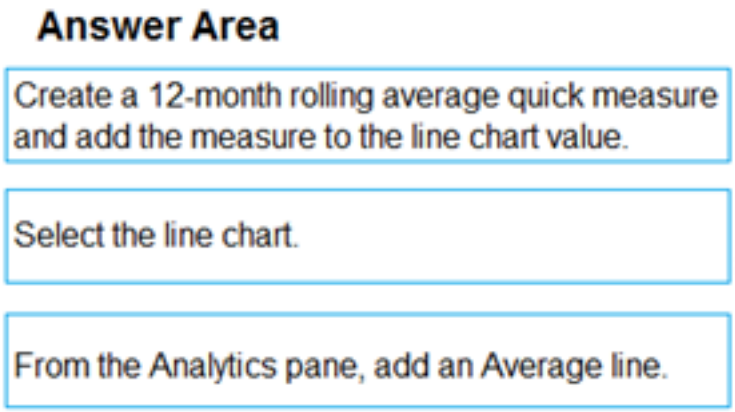
- Create a 12-month rolling average quick measure and add the measure to the line chart value.
- From the Analytics pane, add a Median line.
- Select the line chart.
- From the Analytics pane, add an Average line.
- Turn on data labels for the new line.

Answer Area

Answer:

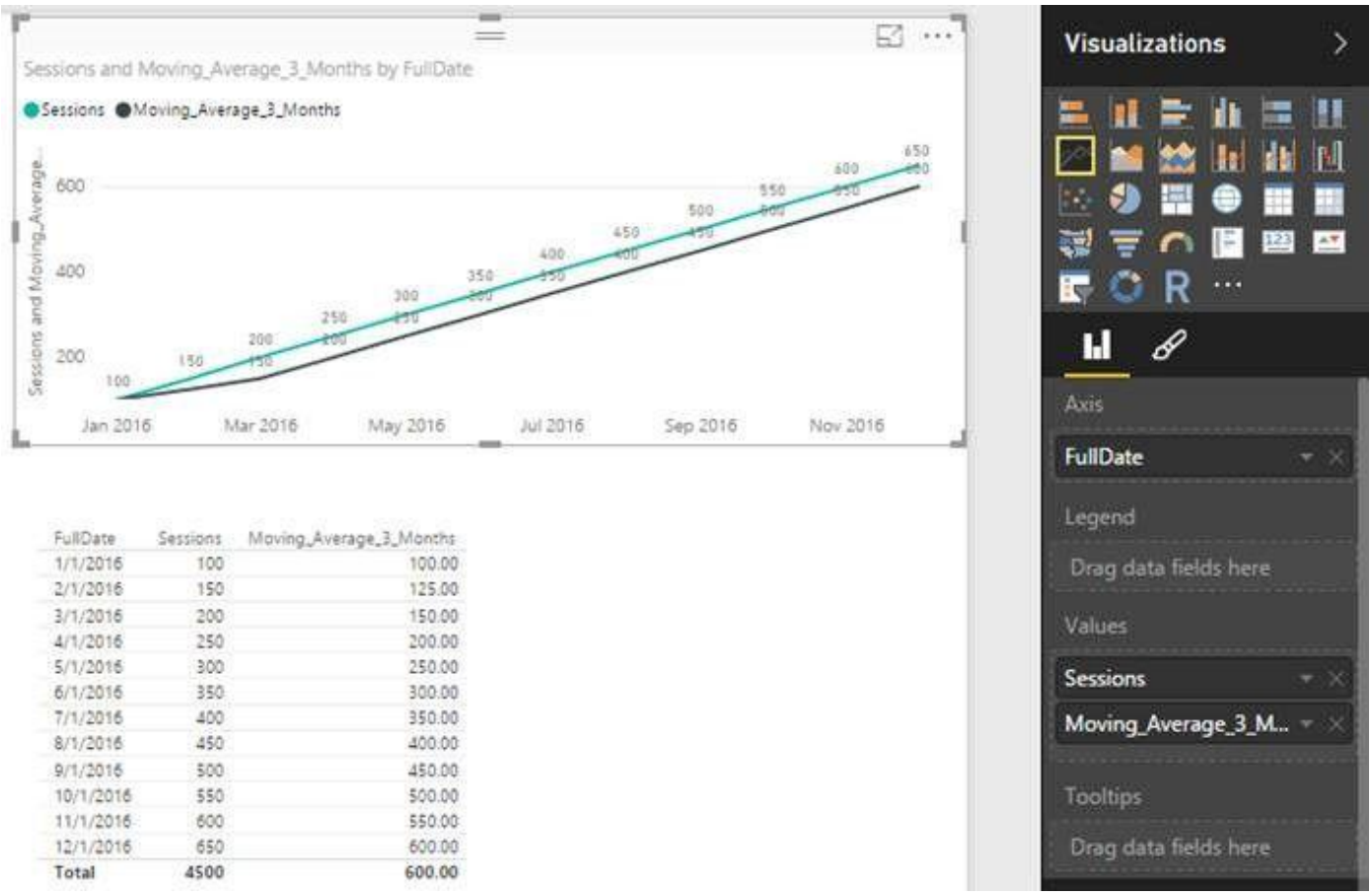


Explanation:



Step 1: Create a 12-month...

You can use calculated measure to get the expected result.



FullDate	Sessions	Moving_Average_3_Months
1/1/2016	100	100.00
2/1/2016	150	125.00
3/1/2016	200	150.00
4/1/2016	250	200.00
5/1/2016	300	250.00
6/1/2016	350	300.00
7/1/2016	400	350.00
8/1/2016	450	400.00
9/1/2016	500	450.00
10/1/2016	550	500.00
11/1/2016	600	550.00
12/1/2016	650	600.00
Total	**4500**	**600.00**

Step 2: Select the line chart

Step 3: From the Analytics pane, add a Average line

Reference:

https://community.powerbi.com/t5/Desktop/Moving-Average/td-p/43041

QUESTION NO: 108 DRAG DROP

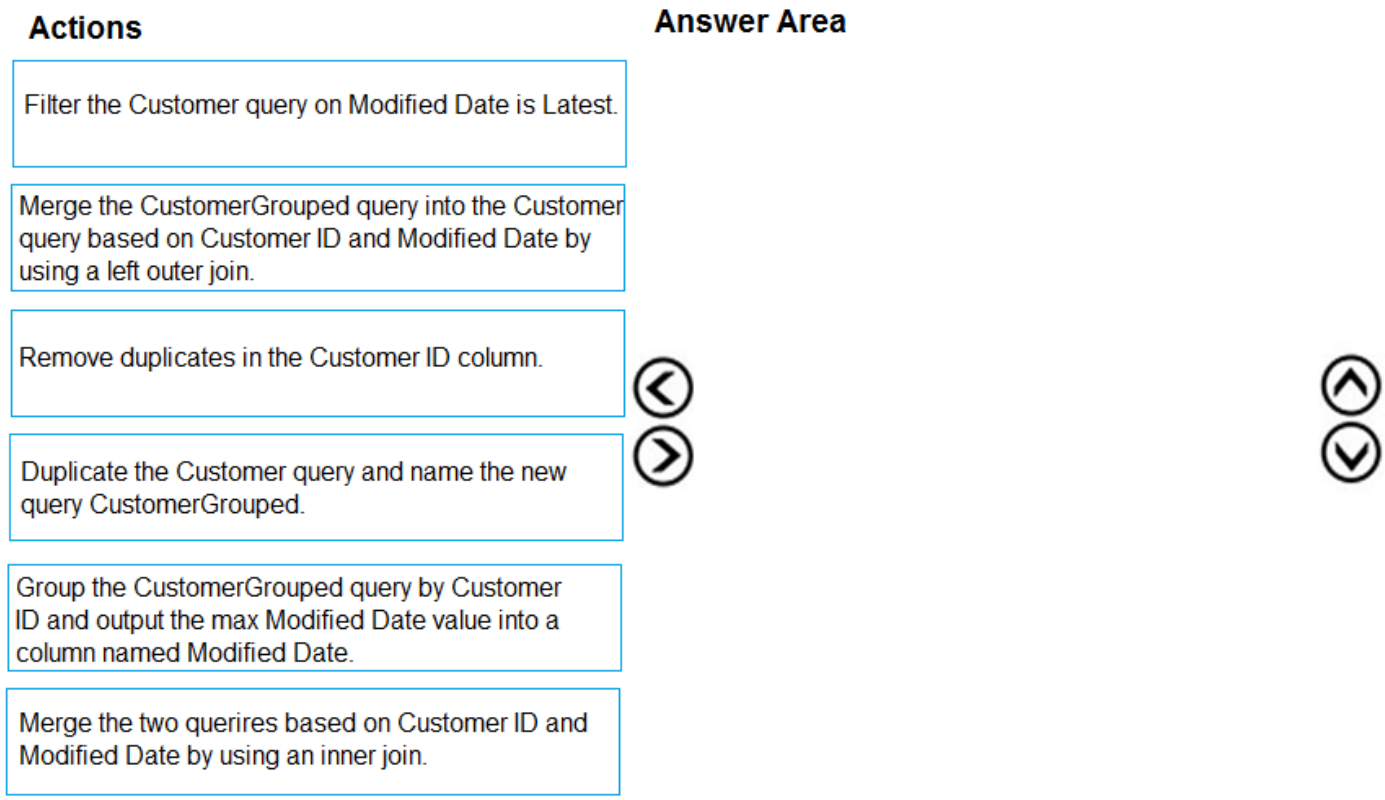
You have a query named Customer that imports CSV files from a data lake. The query contains 50,000 rows as shown in the exhibit. (Click the **Exhibit** tab.)

	Source.Name	Customer ID	Modified Date	Customer	Category
	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%	Valid 100% Error 0% Empty 0%
1	Customer20200104.csv	1	1/1/2020 12:00:00 AM	Tailspin Toys (Head Office)	Novelty Shop
2	Customer20200104.csv	2	1/1/2020 12:00:00 AM	Tailspin Toys (Sylvanite, MT)	Novelty Shop
3	Customer20200104.csv	3	1/1/2020 12:00:00 AM	Tailspin Toys (Peeples Valley, AZ)	Novelty Shop
4	Customer20200104.csv	4	1/4/2020 12:00:00 AM	Tailspin Toys (Medicine Lodge, KS)	Novelty Shop
5	Customer20200104.csv	5	1/4/2020 12:00:00 AM	Tailspin Toys (Gasport, NY)	Novelty Shop
6	Customer20200104.csv	6	1/4/2020 12:00:00 AM	Tailspin Toys (Jessie, ND)	Novelty Shop
7	Customer20200104.csv	7	1/4/2020 12:00:00 AM	Tailspin Toys (Frankewing, TN)	Novelty Shop
8	Customer20200104.csv	8	1/4/2020 12:00:00 AM	Tailspin Toys (Bow Mar, CO)	Novelty Shop
9	Customer20200104.csv	9	1/4/2020 12:00:00 AM	Tailspin Toys (Netcong, NJ)	Novelty Shop
10	Customer20200104.csv	10	1/4/2020 12:00:00 AM	Tailspin Toys (Wimbledon, ND)	Novelty Shop
11	Customer20200112.csv	1	1/12/2020 12:00:00 AM	Tailspin Toys (Head Office)	Novelty Shop
12	Customer20200112.csv	2	1/12/2020 12:00:00 AM	Tailspin Toys (Sylvanite, MT)	Novelty Shop
13	Customer20200112.csv	3	1/12/2020 12:00:00 AM	Tailspin Toys (Peeples Valley, AZ)	Novelty Shop
14	Customer20200112.csv	4	1/12/2020 12:00:00 AM	Tailspin Toys (Medicine Lodge, KS)	Novelty Shop
15	Customer20200112.csv	5	1/12/2020 12:00:00 AM	Tailspin Toys (Gasport, NY)	Novelty Shop
16	Customer20200112.csv	2	1/22/2020 12:00:00 AM	Tailspin Toys (Sylvanite, MT)	Novelty Shop
17	Customer20200112.csv	7	1/22/2020 12:00:00 AM	Tailspin Toys (Frankewing, TN)	Novelty Shop
18	Customer20200112.csv	8	1/22/2020 12:00:00 AM	Tailspin Toys (Bow Mar, CO)	Novelty Shop
19	Customer20200112.csv	9	1/22/2020 12:00:00 AM	Tailspin Toys (Netcong, NJ)	Novelty Shop
20	Customer20200112.csv	10	1/22/2020 12:00:00 AM	Tailspin Toys (Wimbledon, ND)	Novelty Shop

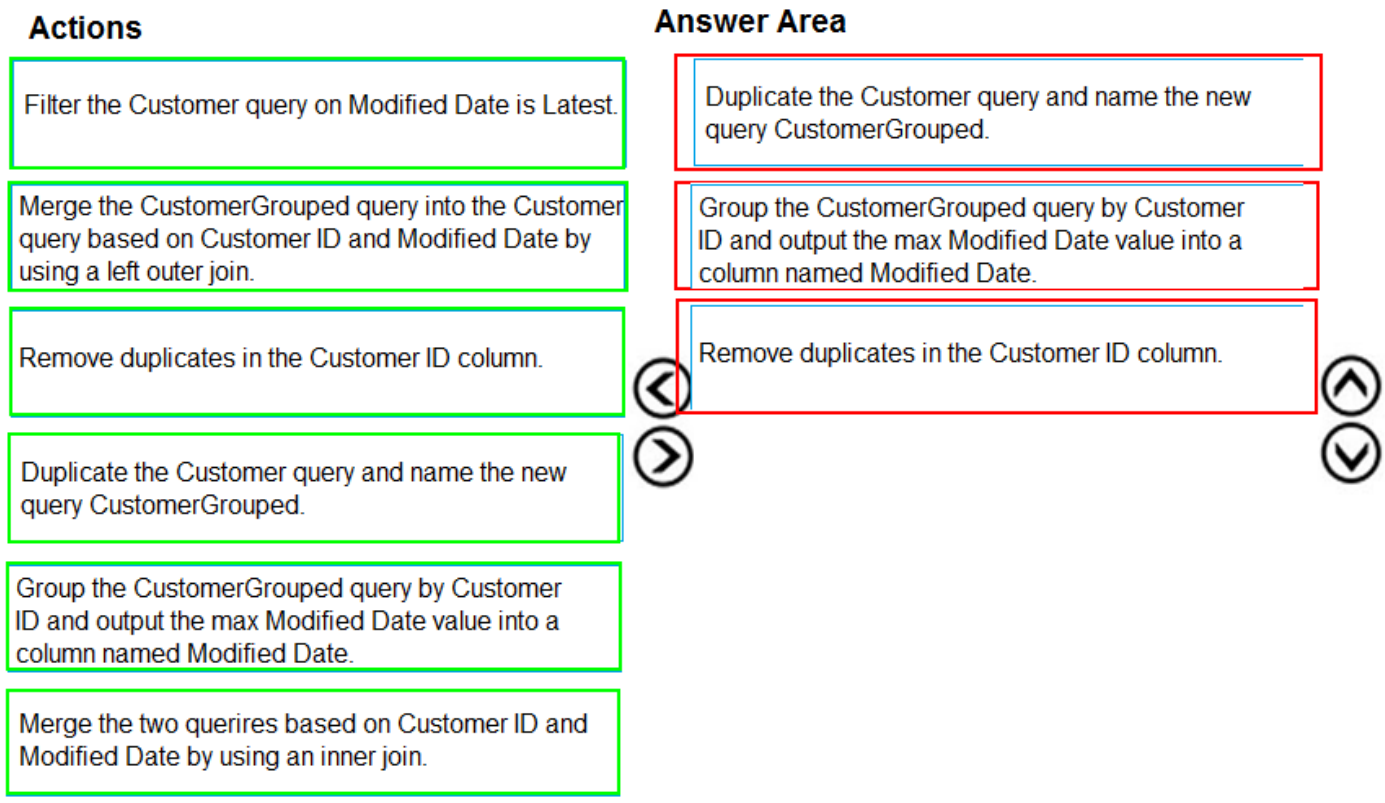
Each file contains deltas of any new or modified rows from each load to the data lake. Multiple files can have the same customer ID.

You need to keep only the last modified row for each customer ID.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Answer:



Explanation:

Answer Area

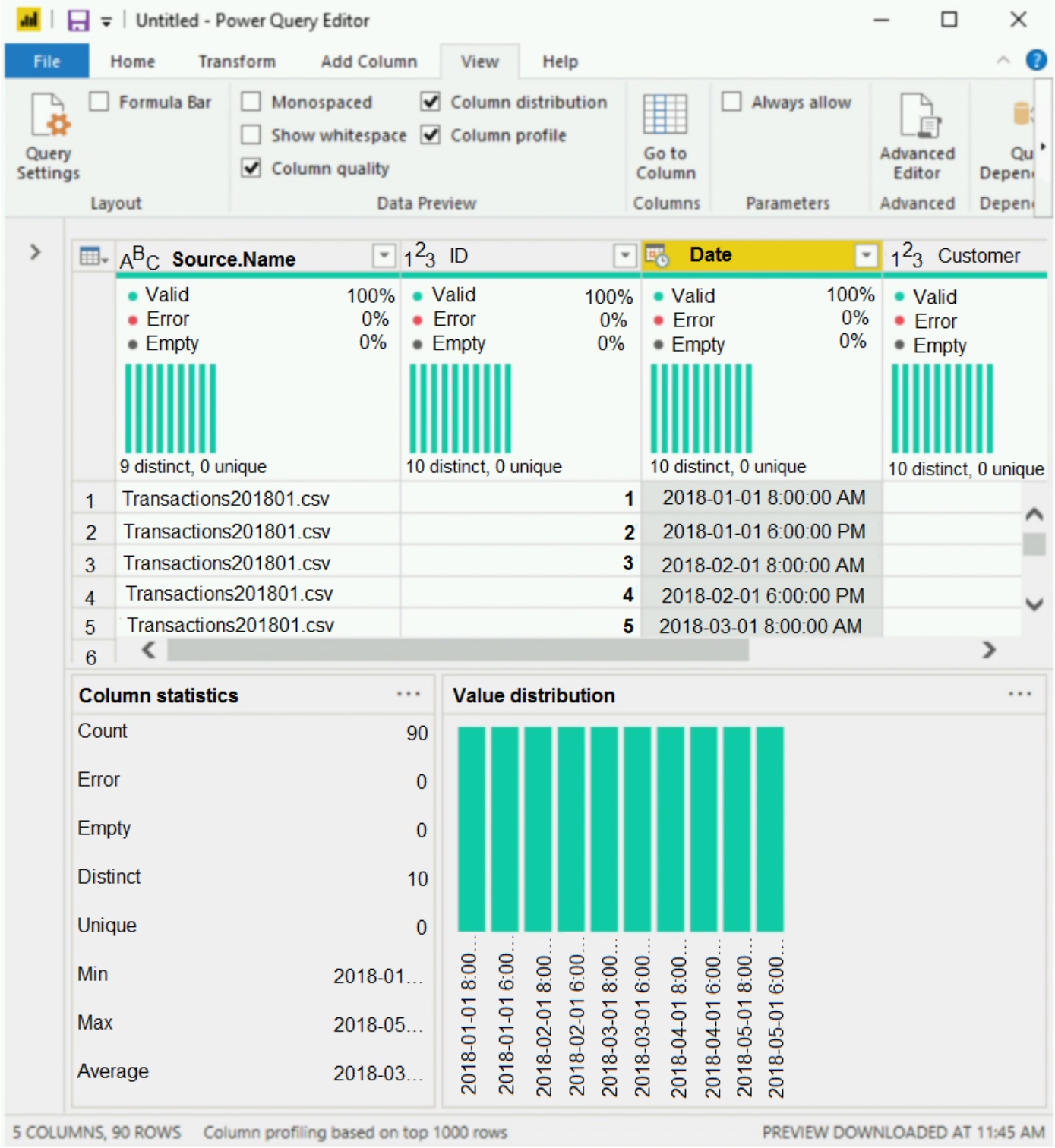
Duplicate the Customer query and name the new query CustomerGrouped.

Group the CustomerGrouped query by Customer ID and output the max Modified Date value into a column named Modified Date.

Remove duplicates in the Customer ID column.

QUESTION NO: 109 HOTSPOT

You view a query named Transactions as shown in the following exhibit.



The query gets CSV files from a folder.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Answer Area

There are **[answer choice]** CSV files:

- 9
- 10
- 25
- 90
- 1,000

Removing duplicates based on the Date column will reduce the dataset to **[answer choice]** rows:

- 9
- 10
- 25
- 90
- 1,000

Answer:

Answer Area

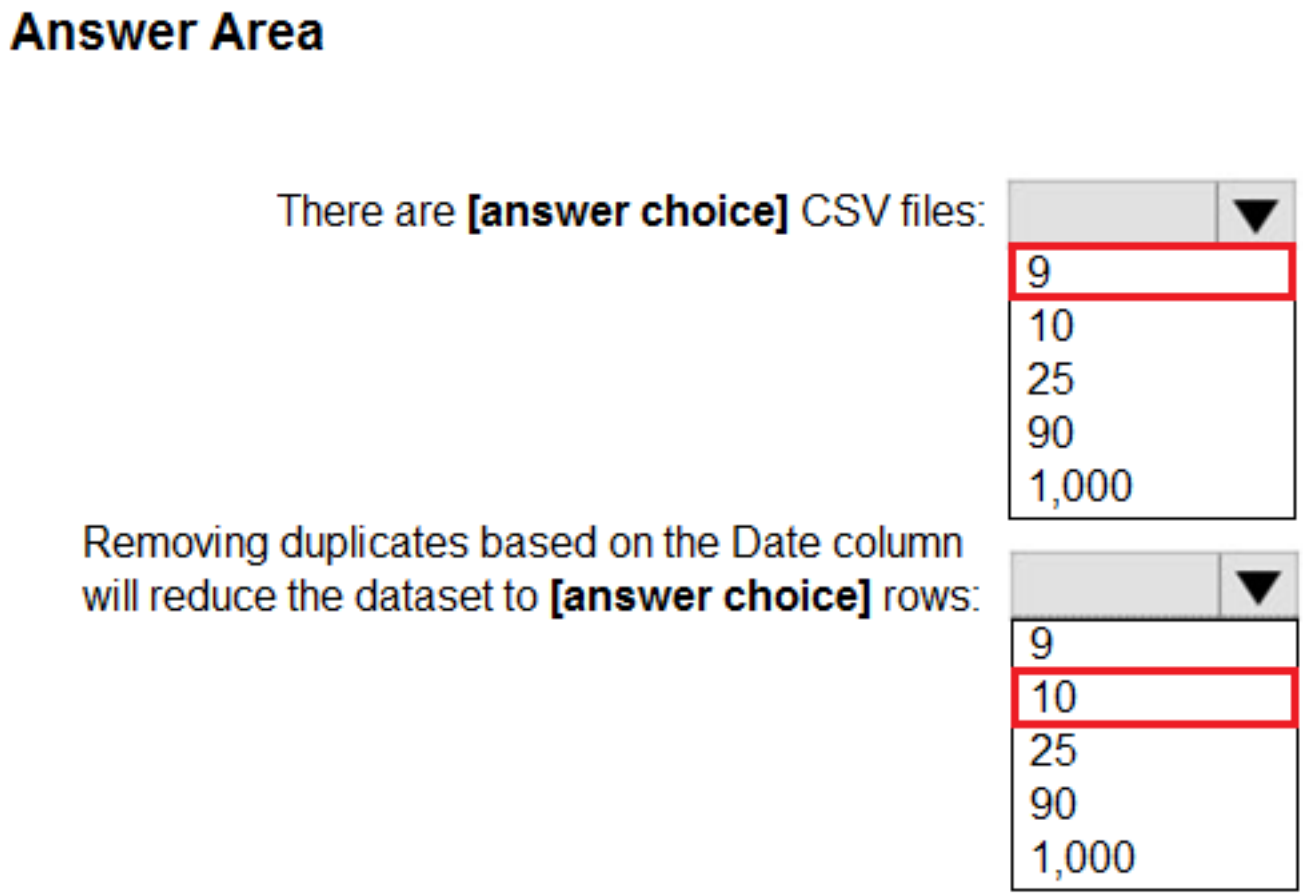
There are **[answer choice]** CSV files:

- 9
- 10
- 25
- 90
- 1,000

Removing duplicates based on the Date column will reduce the dataset to **[answer choice]** rows:

- 9
- 10
- 25
- 90
- 1,000

Explanation:



Box 1: 9

9 distinct CSV files.

Box 2: 10

10 distinct dates.

QUESTION NO: 110

Your company has employees in 10 states.

The company recently decided to associate each state to one of the following three regions: East, West, and North.

You have a data model that contains employee information by state. The model does **NOT** include region information.

You have a report that shows the employees by state.

You need to view the employees by region as quickly as possible.

What should you do?

A.
Create a new aggregation that summarizes by employee.

B.
Create a new group on the state column and set the Group type to **List**.

C.
Create a new group on the state column and set the Group type to **Bin**.

D.
Create a new aggregation that summarizes by state.

Answer: B
Explanation:

With grouping you are normally working with dimensional attributes.

Here we add three new groups (East, West, and North) and add each state to the appropriate group.

Reference:

https://www.mssqltips.com/sqlservertip/4720/binning-and-grouping-data-with-power-bi/

QUESTION NO: 111 HOTSPOT

You are creating a Microsoft Power BI imported data model to perform basket analysis. The goal of the analysis is to identify which products are usually bought together in the same transaction across and within sales territories.

You import a fact table named Sales as shown in the exhibit. (Click the **Exhibit** tab.)

Results Messages

	Sales RowID	Product Key	OrderDate Key	OrderDate	Customer Key	SalesTerritory Key	SalesOrder Number	SalesOrder LineNumber	Order Quantity	LineTotal	TaxAmt	Freight	LastModified	AuditID
1	1	310	20101229	2010-12-29 00:00:00.000	21768	6	SO43697	1	1	3578.27	286.2616	89.4568	2011-01-10 00:00:00.000	127
2	2	346	20101229	2010-12-29 00:00:00.000	28389	7	SO43698	1	1	3399.99	271.9992	84.9998	2011-01-10 00:00:00.000	127
3	3	346	20101229	2010-12-29 00:00:00.000	25863	1	SO43699	1	1	3399.99	271.9992	84.9998	2011-01-10 00:00:00.000	127
4	4	336	20101229	2010-12-29 00:00:00.000	14501	4	SO43700	1	1	699.0982	55.9279	17.4775	2011-01-10 00:00:00.000	127
5	5	346	20101229	2010-12-29 00:00:00.000	11003	9	SO43701	1	1	3399.99	271.9992	84.9998	2011-01-10 00:00:00.000	127
6	6	311	20101230	2010-12-30 00:00:00.000	27645	4	SO43702	1	1	3578.27	286.2616	89.4568	2011-01-11 00:00:00.000	127
7	7	310	20101230	2010-12-30 00:00:00.000	16624	9	SO43703	1	1	3578.27	286.2616	89.4568	2011-01-11 00:00:00.000	127

The related dimension tables are imported into the model.

Sales contains the data shown in the following table.

Column name	Data type	Description
SalesRowID	Integer	ID of the row from the source system, which represents a unique combination of SalesOrderNumber and SalesOrderLineNumber
ProductKey	Integer	Surrogate key that relates to the product dimension
OrderDateKey	Integer	Surrogate key that related to the date dimension and is in the YYYYMMDD format
OrderDate	Datetime	Date and time an order was processed
CustomerKey	Integer	Surrogate key that relates to the customer dimension
SalesTerritoryKey	Integer	Surrogate key that relates to the sales territory dimension
SalesOrderNumber	Integer	Unique identifier of an order
SalesOrderLineNumber	Integer	Unique identifier of a line within an order
OrderQuantity	Integer	Quantity of product ordered
LineTotal	Decimal	Total sales amount of a line before tax
TaxAmt	Decimal	Amount of tax charged for the items on a specified line within an order
Freight	Decimal	Amount of freight charged for the items on a specified line within an order
LastModified	Datetime	The date and time that a row was last modified in the source system
AuditID	Integer	The ID of the data load process that last updated a row

You are evaluating how to optimize the model.

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

NOTE: Each correct selection is worth one point.

Answer Area

Statements	Yes	No
The SalesRowID and AuditID columns can be removed from the model without impeding the analysis goals.	○	○
Both the OrderDateKey and OrderDate columns are necessary to perform the basket analysis.	○	○
The TaxAmt column must retain the current number of decimal places to perform the basket analysis.	○	○

Answer:

Answer Area

Statements	Yes	No
The SalesRowID and AuditID columns can be removed from the model without impeding the analysis goals.	○	○
Both the OrderDateKey and OrderDate columns are necessary to perform the basket analysis.	○	○
The TaxAmt column must retain the current number of decimal places to perform the basket analysis.	○	○

Explanation:

Answer Area

Statements	Yes	No
The SalesRowID and AuditID columns can be removed from the model without impeding the analysis goals.	●	○
Both the OrderDateKey and OrderDate columns are necessary to perform the basket analysis.	●	○
The TaxAmt column must retain the current number of decimal places to perform the basket analysis.	○	●

Reference:

https://finance-bi.com/power-bi-basket-analysis/

QUESTION NO: 112 HOTSPOT

You are enhancing a Power BI model that has DAX calculations.

You need to create a measure that returns the year-to-date total sales from the same date of the previous calendar year.

Which DAX functions should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area

```
Sales PYTD =
VAR startyear =
     STARTOFYEAR (  PREVIOUSYEAR  (  'Calendar'[Date] ) )
VAR enddate =
     LASTDATE ( Sales[Date] ) - 365
RETURN
     [ CALCULATE ( | DATESBETWEEN ( | SAMEPERIODLASTYEAR ( | SUM ( ]
     [ CALCULATE ( | DATESBETWEEN ( | SAMEPERIODLASTYEAR ( | SUM ( ] ( Sales[Sales] ),
     [ CALCULATE ( | DATESBETWEEN ( | SAMEPERIODLASTYEAR ( | SUM ( ] ( 'Calendar'[Date], startyear, enddate )
     )
```

Answer:

Answer Area

```
Sales PYTD =
VAR startyear =
     STARTOFYEAR (  PREVIOUSYEAR  (  'Calendar'[Date] ) )
VAR enddate =
     LASTDATE ( Sales[Date] ) - 365
RETURN
```

[CALCULATE (▼]
- CALCULATE (
- DATESBETWEEN (
- SAMEPERIODLASTYEAR (
- SUM (

[CALCULATE (▼] (Sales[Sales]),
- CALCULATE (
- DATESBETWEEN (
- SAMEPERIODLASTYEAR (
- SUM (

[CALCULATE (▼] ('Calendar'[Date], startyear, enddate)
- CALCULATE (
- DATESBETWEEN (
- SAMEPERIODLASTYEAR (
- SUM (

)

Explanation:

Answer Area

```
Sales PYTD =
VAR startyear =
     STARTOFYEAR (  PREVIOUSYEAR  (  'Calendar'[Date] ) )
VAR enddate =
     LASTDATE ( Sales[Date] ) - 365
RETURN
```

[CALCULATE (/ DATESBETWEEN (/ SAMEPERIODLASTYEAR (/ SUM ( ]

[CALCULATE (/ DATESBETWEEN (/ SAMEPERIODLASTYEAR (/ SUM ( ] (Sales[Sales]),

[CALCULATE (/ DATESBETWEEN (/ SAMEPERIODLASTYEAR (/ SUM ( ] ('Calendar'[Date], startyear, enddate)

)

Reference:

https://www.kasperonbi.com/get-the-ytd-of-the-same-period-last-year/

QUESTION NO: 113

You are configuring a Microsoft Power BI data model to enable users to ask natural language questions by using Q&A.

You have a table named Customer that has the following measure.

Customer Count = DISTINCTCOUNT(Customer[CustomerID])

Users frequently refer to customers as subscribers.

You need to ensure that the users can get a useful result for "subscriber count" by using Q&A. The solution must minimize the size of the model.

What should you do?

A.
Add a synonym of "subscriber" to the Customer table.

B.
Add a synonym of "subscriberID" to the CustomerID column.

C.
Add a description of "Subscriber" to the Customer table.

D.
Add a description of "subscriber count" to the Customer Count measure.

Answer: A
Explanation:

You can add synonyms to tables and columns.

Note: This step applies specifically to Q&A (and not to Power BI reports in general). Users often have a variety of terms they use to refer to the same thing, such as total sales, net sales, total net sales. You can add these synonyms to tables and columns in the Power BI model.

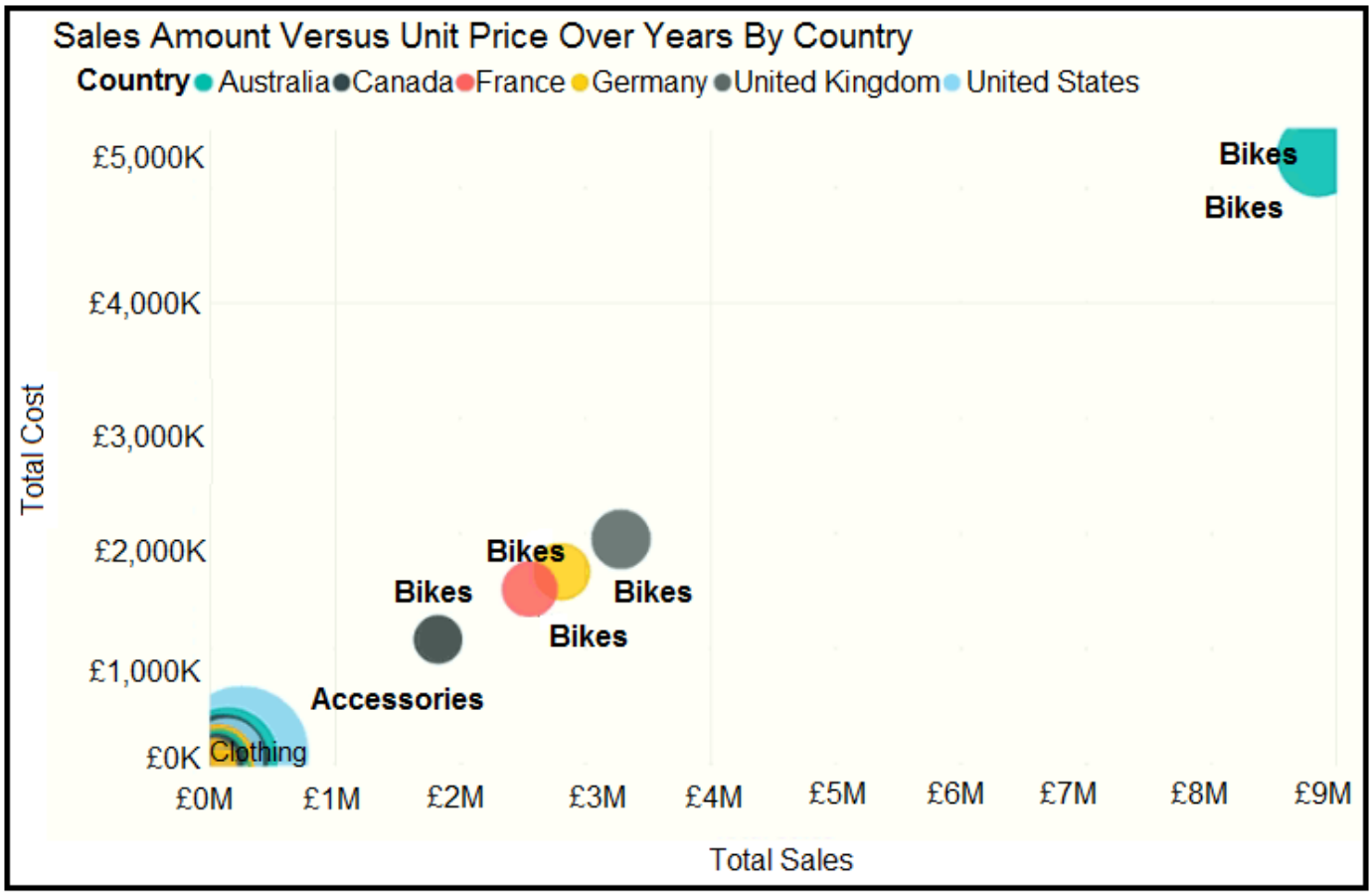
This step applies specifically to Q&A (and not to Power BI reports in general). Users often have a variety of terms they use to refer to the same thing, such as total sales, net sales, total net sales. You can add these synonyms to tables and columns in the Power BI model.

Reference:

https://docs.microsoft.com/en-us/power-bi/natural-language/q-and-a-best-practices

QUESTION NO: 114

You have the visual shown in the exhibit. (Click the **Exhibit** tab.)



You need to show the relationship between Total Cost and Total Sales over time.

What should you do?

A.
Add a slicer for the year.

B.
Create a DAX measure that calculates year-over-year growth.

C.
Add a play axis.

D.
From the Analytics pane, add an Average line.

Answer: C

Explanation:

You can set up a date field in play axis, and then scatter chart will animate how measure values are compared to each other in each point of a time.

Reference:

https://radacad.com/storytelling-with-power-bi-scatter-chart

QUESTION NO: 115

You have a report that contains three pages. One of the pages contains a KPI visualization.

You need to filter all the visualizations in the report except for the KPI visualization.

Which two actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A.
Configure a report-level filter.

B.
Edit the interactions of the KPI visualization.

C.
Configure a page-level filter.

D.
Add the same slicer to each page and configure Sync slicers.

E.
Edit the interactions of the slicer that is on the same pages as the KPI visualization.

Answer: D,E

Explanation:

Slicers are another way of filtering. They narrow the portion of the dataset that is shown in the other report visualizations.

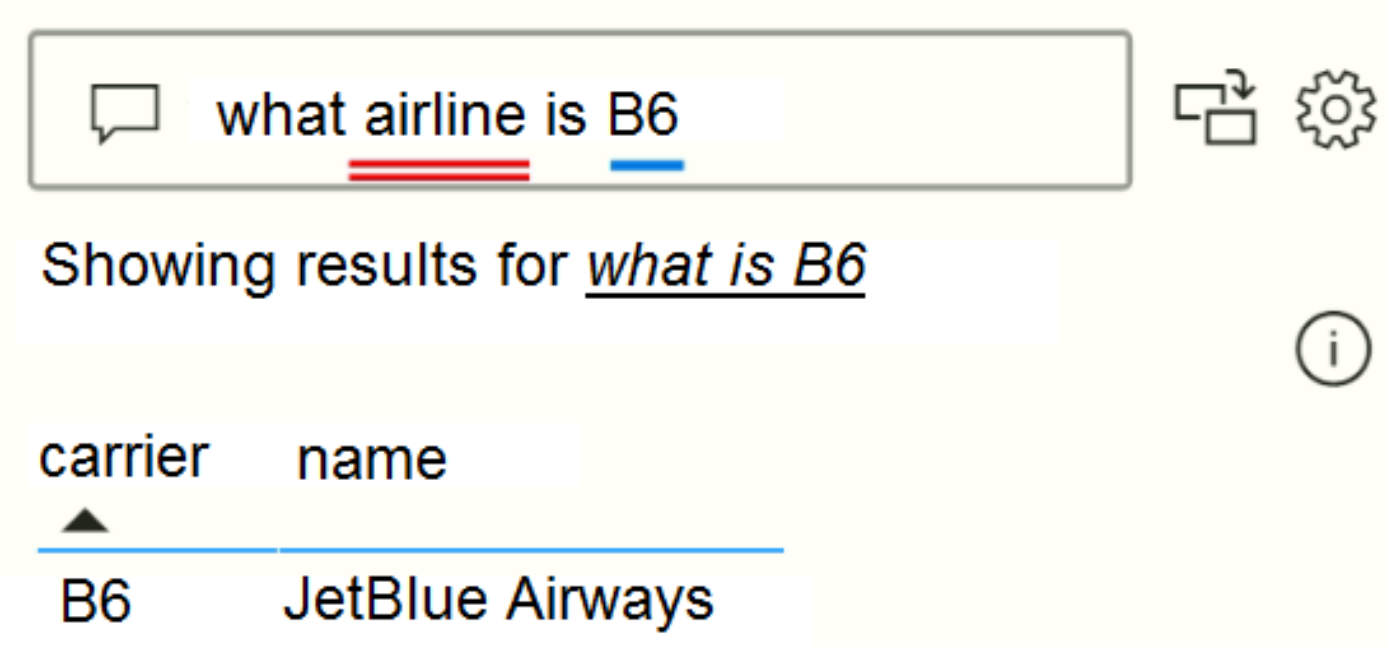
By default, slicers on report pages affect all the other visualizations on that page, including each other. Use visual interactions to exclude some page visualizations from being affected by others.

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-slicers

QUESTION NO: 116

You have a Q&A visual that displays information from a table named Carriers as shown in the following exhibit.



You need to ensure that users can ask questions by using the term airline or carrier. The solution must minimize changes to the data model.

What should you do?

A.
Add a duplicate query named Airline.

B.
Add airline as a synonym of carrier.

C.
Rename the carrier column as airline in the Carriers query.

D.
Rename the query from Carriers to airlines.

Answer: B

Explanation:

Add synonyms to tables and columns: This step applies specifically to Q&A (and not to Power BI reports in general). Users often have a variety of terms they use to refer to the same thing, such as total sales, net sales, total net sales. You can add these synonyms to tables and columns in the Power BI model.

This step can be important. Even with straightforward table and column names, users of Q&A ask questions using the vocabulary that first comes to them. They're not choosing from a predefined list of columns. The more sensible synonyms you add, the better your users' experience is with your report.

Reference:

https://docs.microsoft.com/en-us/power-bi/natural-language/q-and-a-best-practices

Topic 5, Deploy and Maintain Deliverables

QUESTION NO: 117 HOTSPOT

Case Study

This is a case study. **Case studies are not timed separately. You can use as much exam time as you would like to complete each case.** However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other question on this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question on this case study, click the **Next** button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an **All Information tab**, note that the information displayed is

identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the **Question** button to return to the question.

Overview

Contoso, Ltd. is a manufacturing company that produces outdoor equipment. Contoso has quarterly board meetings for which financial analysts manually prepare Microsoft Excel reports, including profit and loss statements for each of the company's four business units, a company balance sheet, and net income projections for the next quarter.

Existing Environment

Data and Sources

Data for the reports comes from three sources. Detailed revenue, cost, and expense data comes from an Azure SQL database. Summary balance sheet data comes from Microsoft Dynamics 365 Business Central. The balance sheet data is not related to the profit and loss results, other than they both relate to dates.

Monthly revenue and expense projections for the next quarter come from a Microsoft SharePoint Online list. Quarterly projections relate to the profit and loss results by using the following shared dimensions: date, business unit, department, and product category.

Net Income Projection Data

Net income projection data is stored in a SharePoint Online list named Projections in the format shown in the following table.

MonthStartDate	Projection type	ProductCategory	Department	Projection
1-Apr-20	Revenue	Bikes	N/A	200,000
1-Apr-20	Revenue	Components	N/A	250,000
1-Apr-20	Revenue	Clothing	N/A	300,000
1-Apr-20	Revenue	Accessories	N/A	150,000
1-May-20	Revenue	Bikes	N/A	200,000
1-May-20	Revenue	Components	N/A	250,000
1-Apr-20	Expense	Bikes	Bike Manufacture	50,000
1-Apr-20	Expense	Bikes	Bike Sales	3,333

Revenue projections are set at the monthly level and summed to show projections for the quarter.

Balance Sheet Data

The balance sheet data is imported with final balances for each account per month in the format shown in the following table.

AccountCategory	Account	Month	Year	BalanceAmount
Current assets	Cash and cash equivalents	3	2020	20,289
Current assets	Inventories	3	2020	4,855
Long-term liabilities	Long-term debt	3	2020	50,207
Current assets	Cash and cash equivalents	2	2020	28,209
Current assets	Inventories	2	2020	5,845
Long-tern liabilities	Long-tern debt	2	2020	49,887
Current assets	Cash and cash equivalents	1	2020	25,567
Current assets	Inventories	1	2020	65,998
Long-term liabilities	Long-term debt	1	2020	46,124

There is always a row for each account for each month in the balance sheet data.

Dynamics 365 Business Central Data

Business Central contains a product catalog that shows how products roll up to product categories, which roll up to business units.

Revenue data is provided at the date and product level. Expense data is provided at the date and department level.

Business Issues

Historically, it has taken two analysts a week to prepare the reports for the quarterly board meetings. Also, there is usually at least one issue each quarter where a value in a report is wrong because of a bad cell reference in an Excel formula. On occasion, there are conflicting results in the reports because the products and departments that roll up to each business unit are not defined consistently.

Requirements

Planned Changes

Contoso plans to automate and standardize the quarterly reporting process by using Microsoft Power BI. The company wants to how long it takes to populate reports to less than two days. The company wants to create common logic for business units, products, and departments to be used across all reports, including, but not limited, to the quarterly reporting for the board.

Technical Requirements

Contoso wants the reports and datasets refreshed with minimal manual effort.

The company wants to provide a single package of reports to the board that contains custom navigation and links to supplementary information.

Maintenance, including manually updating data and access, must be minimized as much as possible.

Security Requirements

The reports must be made available to the board from powerbi.com. An Azure Active Directory group will be used to share information with the board.

The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

Name	Data type	Example
Date	Date	4-Apr-2020
Month	Integer	20,2004
Month Name	Text	February
Quarter	Integer	20,202
Year	Integer	2,020

The definitions and attributes of products, departments, and business units must be consistent across all reports.

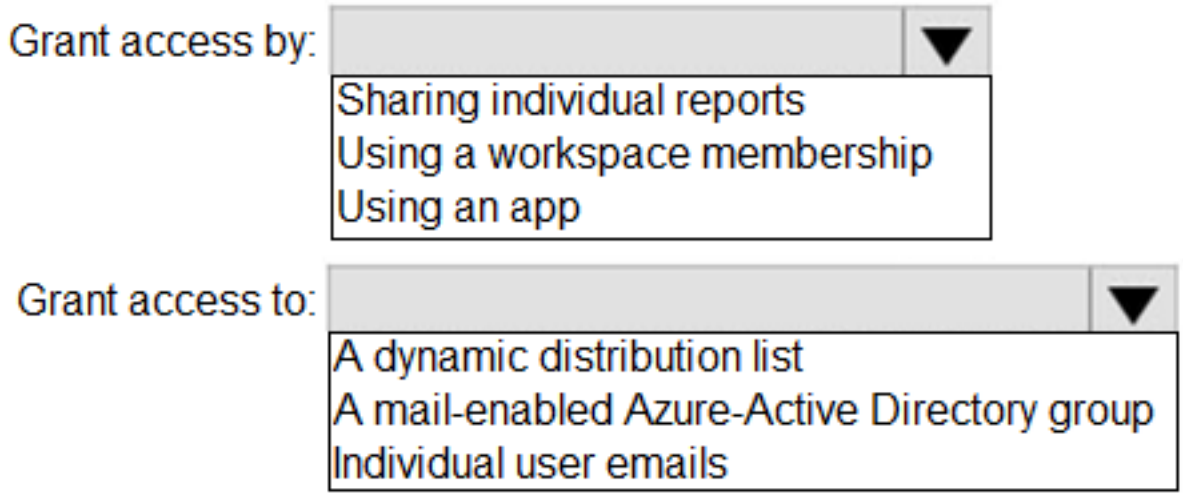
The board must be able to get the following information from the quarterly reports:

- Revenue trends over time
- Ending balances for each account
- A comparison of expenses versus projections by quarter
- Changes in long-term liabilities from the previous quarter
- A comparison of quarterly revenue versus the same quarter during the prior year

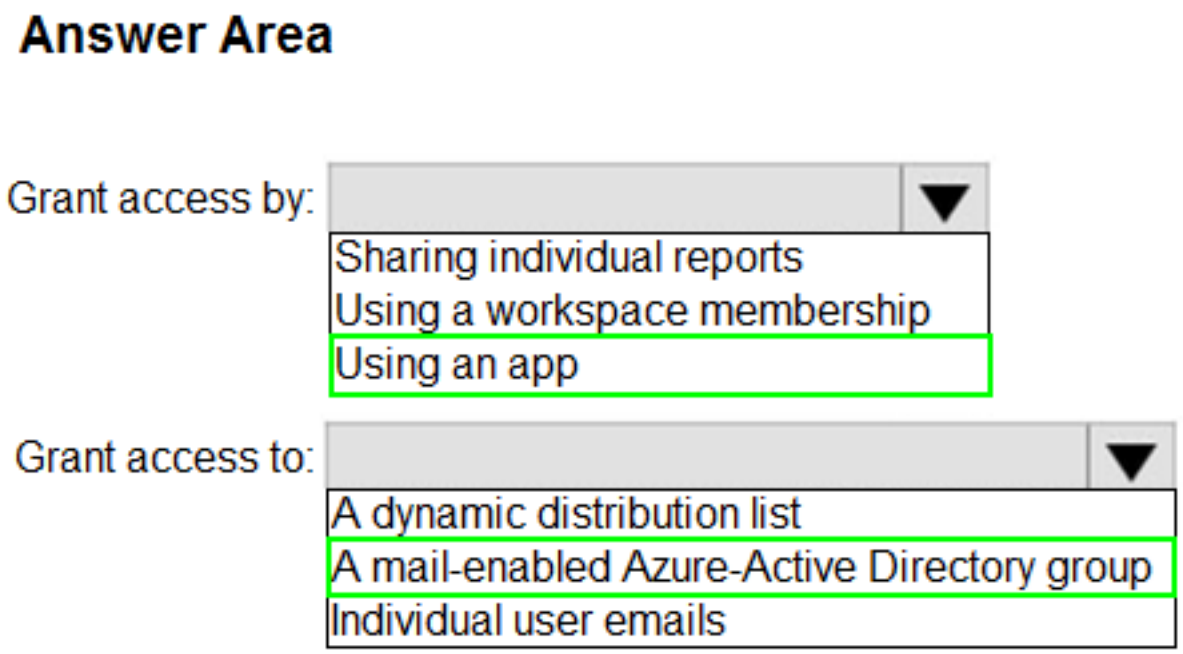
How should you distribute the reports to the board? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

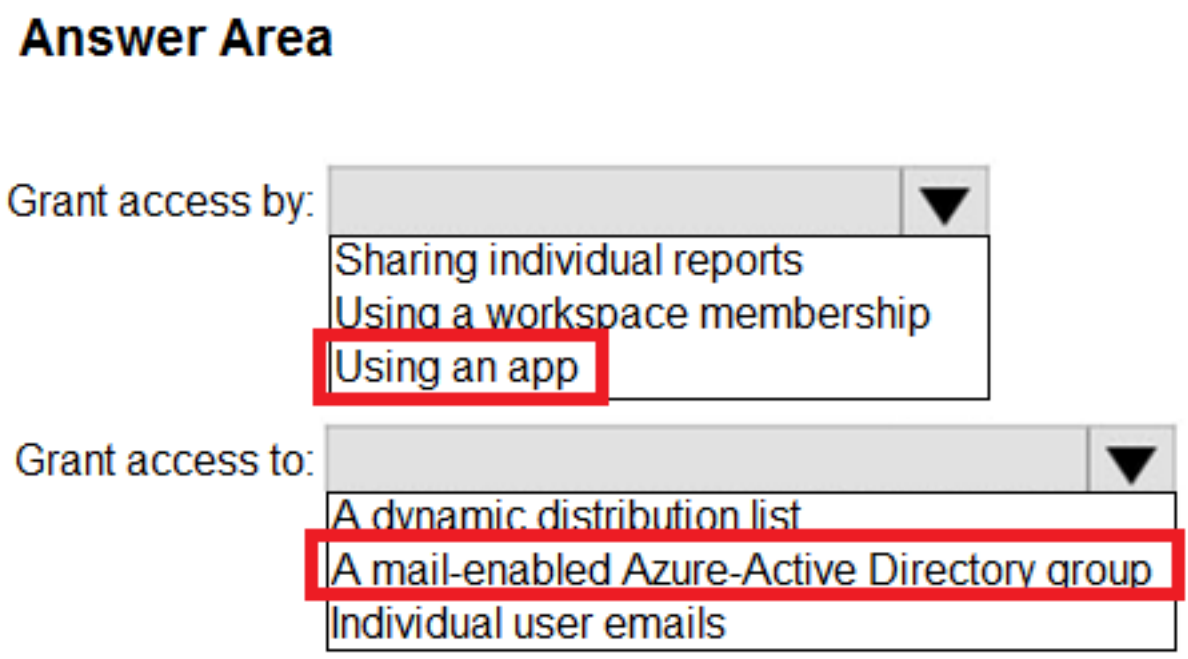
Answer Area



Answer:



Explanation:



Box 1: Using an app

Scenario:

The company wants to provide a single package of reports to the board that contains custom navigation and links to supplementary information.

Box 2: A mail-enabled Azure-Active Directory group

Scenario: Security Requirements

The reports must be made available to the board from powerbi.com. A mail-enabled Azure-Active Directory (security)group will be used to share information with the board.

Reference:

https://docs.microsoft.com/en-us/power-bi/admin/service-admin-rls#using-rls-with-workspaces-in-power-bi

QUESTION NO: 118 HOTSPOT

Case Study

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Report Requirements

You plan to relate the balance sheet to a standard date table in Power BI in a many-to-one relationship based on the last day of the month. At least one of the balance sheet reports in the quarterly reporting package must show the ending balances for the quarter, as well as for the previous quarter.

Projections must contain a column named RevenueProjection that contains the revenue projection amounts. A relationship must be created from Projections to a table named Date that contains the columns shown in the following table.

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Month Name	Text	February
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The definitions and attributes of products, departments, and business units must be consistent across all reports.

The board must be able to get the following information from the quarterly reports:

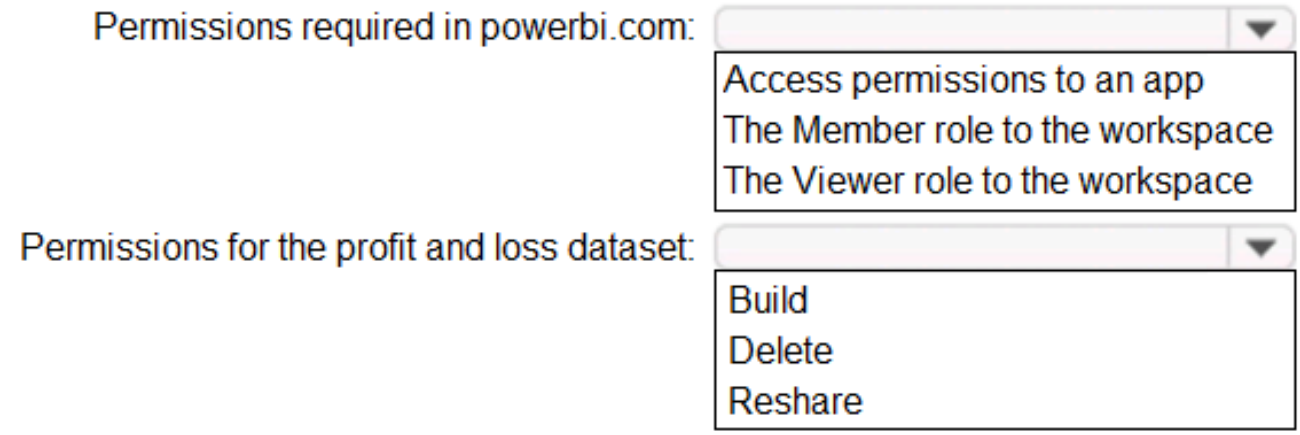
- Revenue trends over time
- Ending balances for each account
- A comparison of expenses versus projections by quarter
- Changes in long-term liabilities from the previous quarter
- A comparison of quarterly revenue versus the same quarter during the prior year

You need to grant access to the business unit analysts.

What should you configure? To answer, select the appropriate options in the answer area.

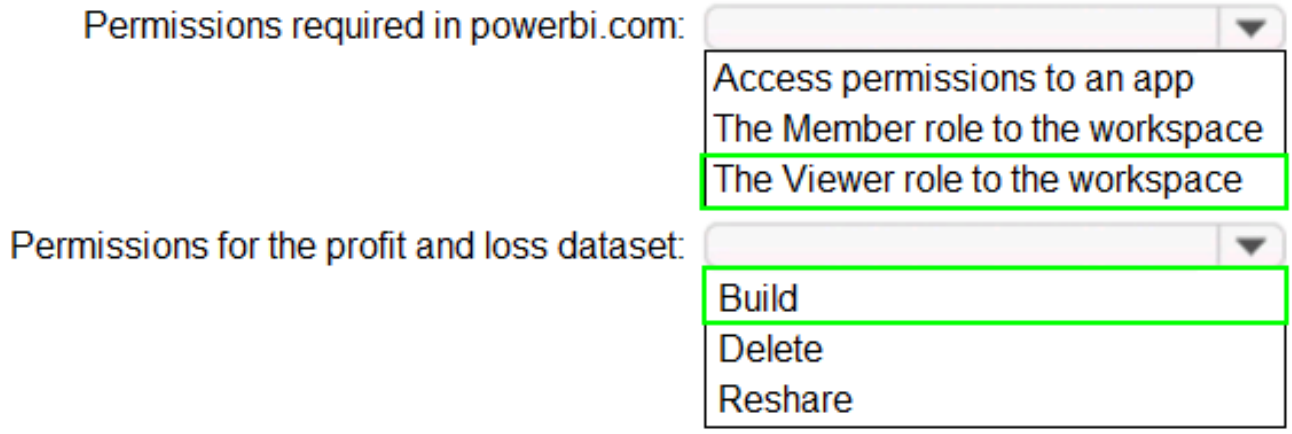
NOTE: Each correct selection is worth one point.

Answer Area



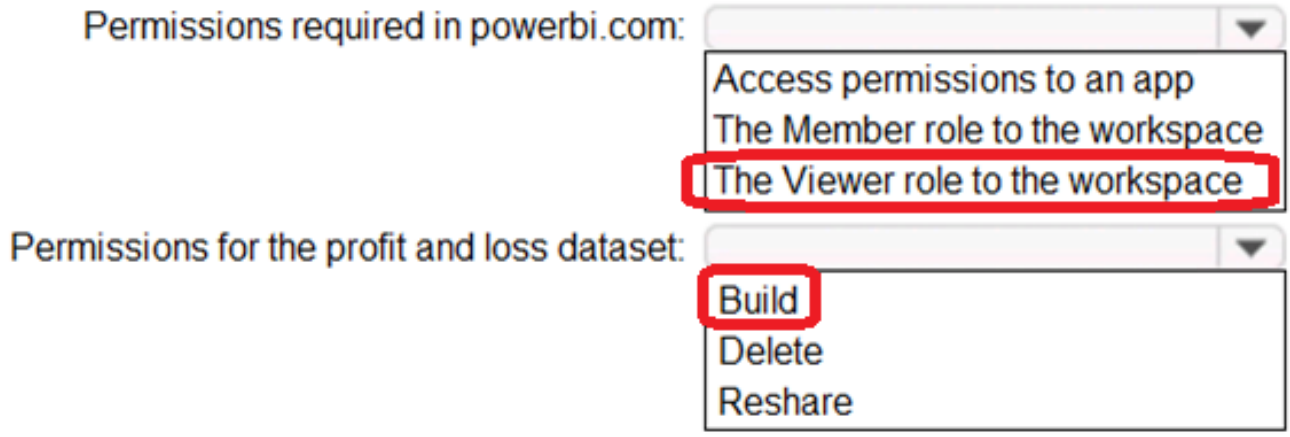
Answer:

Answer Area



Explanation:

Answer Area



Box 1: The Viewer role to the workspace

The Viewer role gives a read-only experience to its users. They can view dashboards, reports, or workbooks in the workspace, but can't browse the datasets or dataflows. Use the Viewer role wherever you would previously use a classic workspace set to "Members can only view Power BI content".

Capability	Admin	Member	Contributor	Viewer
Update and delete the workspace.	X			
Add/remove people, including other admins.	X			
Add members or others with lower permissions.	X	X		
Publish and update an app.	X	X		
Share an item or share an app.	X	X		
Allow others to reshare items.	X	X		
Create, edit, and delete content in the workspace.	X	X	X	
Publish reports to the workspace, delete content.	X	X	X	
View an item.	X	X	X	X
Create a report in another workspace based on a dataset in this workspace.	X	X	X	X [1]
Copy a report.	X	X	X	X [1]

Box 2: Build

The analysts must be able to build new reports from the dataset that contains the profit and loss data.

Scenario: The reports must be made available to the board from powerbi.com.

The analysts responsible for each business unit must see all the data the board sees, except the profit and loss data, which must be restricted to only their business unit's data. The analysts must be able to build new reports from the dataset that contains the profit and loss data, but any reports that the analysts build must not be included in the quarterly reports for the board. The analysts must not be able to share the quarterly reports with anyone.

Reference:

https://www.nickyvv.com/2019/08/the-new-power-bi-workspace-viewer-role-explained.html

QUESTION NO: 119 DRAG DROP

You have a Microsoft Power BI workspace.

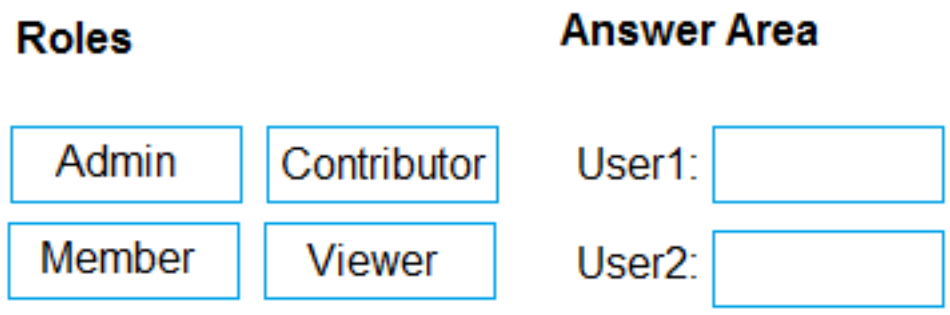
You need to grant the user capabilities shown in the following table.

User name	Task
User1	Create and publish apps.
User2	Publish reports to the workspace and delete dashboards

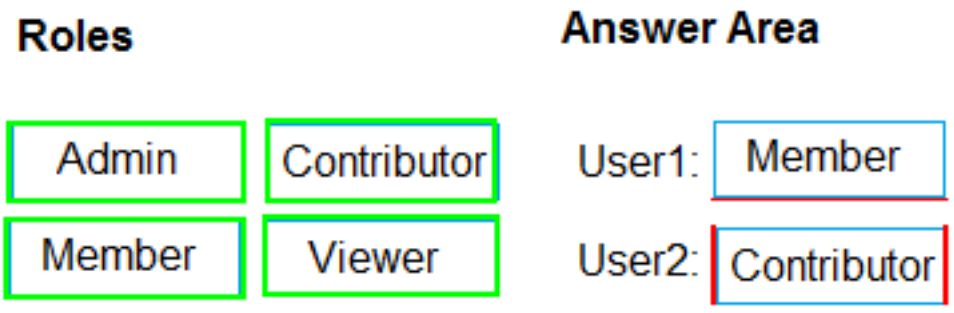
The solution must use the principle of least privilege.

Which user role should you assign to each user? To answer, drag the appropriate roles to the correct users. Each role may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.



Answer:



Explanation:

Answer Area

User1: Member

User2: Contributor

Box 1: Member

Capability	Admin	Member	Contributor	Viewer
Update and delete the workspace.	✓			
Add/remove people, including other admins.	✓			
Allow Contributors to update the app for the workspace	✓			
Add members or others with lower permissions.	✓	✓		
Publish and change permissions for an app	✓	✓		
Update an app.	✓	✓	If allowed [1]	

Reference:

https://docs.microsoft.com/en-us/power-bi/collaborate-share/service-new-workspaces

QUESTION NO: 120

You create a dataset sourced from dozens of flat files in Azure Blob storage. The dataset uses incremental refresh.

From powerbi.com, you deploy the dataset and several related reports to Microsoft Power BI Premium capacity.

You discover that the dataset refresh fails after the refresh runs out of resources.

What is a possible cause of the issue?

A.
Query folding is not occurring.

B.
You selected **Only refresh complete periods**.

C.
The data type of the column used to partition the data changed.

D.
A filter is missing on the report.

Answer: A
Explanation:

The Power BI service partitions data based on date range. This is what enables only certain partitions to be refreshed incrementally. To make this work, the partition filter conditions are pushed down to the source system by including them in the queries. Using Power Query terminology, this is called "query folding". It is not recommended that incremental refresh is used when the required query folding cannot take place.

Reference:

https://powerbi.microsoft.com/en-us/blog/incremental-refresh-query-folding/

QUESTION NO: 121

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have several reports and dashboards in a workspace.

You need to grant all organizational users read access to a dashboard and several reports.

Solution: You enable included in app for all assets.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

QUESTION NO: 122

You publish a Microsoft Power BI dataset to powerbi.com. The dataset appends data from an on-premises Oracle database and an Azure SQL database by using one query.

You have admin access to the workspace and permission to use an existing On-premises data gateway for which the Oracle data source is already configured.

You need to ensure that the data is updated every morning. The solution must minimize configuration effort.

Which two actions should you perform when you configure scheduled refresh? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A.
Configure the dataset to use the existing On-premises data gateway.

B.
Deploy an On-premises data gateway in personal mode.

C.
Set the refresh frequency to **Daily**.

D.
Configure the dataset to use the personal gateway.

Answer: B,C

Explanation:

B: The on-premises data gateway acts as a bridge to provide quick and secure data transfer between on-premises data (data that isn't in the cloud) and several Microsoft cloud services. These cloud services include Power BI.

On-premises data gateway (personal mode) allows one user to connect to sources, and can't be shared with others. An on-premises data gateway (personal mode) can be used only with Power BI. This gateway is well-suited to scenarios where you're the only person who creates reports, and you don't need to share any data sources with others.

C: For Power BI users, refreshing data typically means importing data from the original data sources into a dataset, either based on a refresh schedule or on-demand. You can perform multiple dataset refreshes daily, which might be necessary if the underlying source data changes frequently.

Reference:

https://docs.microsoft.com/en-us/power-bi/connect-data/refresh-data

QUESTION NO: 123

You need to provide a user with the ability to add members to a workspace. The solution must use the principle of least privilege.

Which role should you assign to the user?

A.
Viewer

B.
Contributor

C.
Member

D.
Admin

Answer: C

Explanation:

A Member can add members or others with lower permissions.

Note:

Capability	Admin	Member	Contributor	Viewer
Update and delete the workspace.	✓			
Add/remove people, including other admins.	✓			
Allow Contributors to update the app for the workspace	✓			
Add members or others with lower permissions.	✓	✓		

QUESTION NO: 124

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have several reports and dashboards in a workspace.

You need to grant all organizational users read access to a dashboard and several reports.

Solution: You publish an app to the entire organization.

Does this meet the goal?

A.
Yes

B.

No

Answer: B

Explanation:

Instead assign all the users the Viewer role to the workspace.

Note: The Viewer role gives a read-only experience to its users. They can view dashboards, reports, or workbooks in the workspace, but can't browse the datasets or dataflows. Use the Viewer role wherever you would previously use a classic workspace set to "Members can only view Power BI content".

Reference:

https://powerbi.microsoft.com/en-us/blog/announcing-the-new-viewer-role-for-power-bi-workspaces/

QUESTION NO: 125

You have multiple dashboards.

You need to ensure that when users browse the available dashboards from powerbi.com, they can see which dashboards contain Personally Identifiable Information (PII). The solution must minimize configuration effort and impact on the dashboard design.

What should you use?

A.
comments

B.
tiles

C.
Microsoft Information Protection sensitivity labels

D.
Active Directory groups

Answer: C

Explanation:

Microsoft Information Protection sensitivity labels provide a simple way for your users to classify critical content in Power BI without compromising productivity or the ability to collaborate.

Sensitivity labels can be applied to datasets, reports, dashboards, and dataflows.

Reference:

https://docs.microsoft.com/en-us/power-bi/admin/service-security-sensitivity-label-overview

QUESTION NO: 126

You have a Power BI tenant.

You have reports that use financial datasets and are exported as PDF files.

You need to ensure that the reports are encrypted.

What should you implement?

A.
dataset certifications

B.
row-level security (RLS)

C.
sensitivity labels

D.
Microsoft Intune policies

Answer: C

Explanation:

General availability of sensitivity labels in Power BI.

Microsoft Information Protection sensitivity labels provide a simple way for your users to classify critical content in Power BI without compromising productivity or the ability to collaborate. Sensitivity labels can be applied on datasets, reports, dashboards, and dataflows. When data is

exported from Power BI to Excel, PowerPoint or PDF files, Power BI automatically applies a sensitivity label on the exported file and protects it according to the label's file encryption settings. This way your sensitive data remains protected no matter where it is.

Reference:

https://powerbi.microsoft.com/en-us/blog/announcing-power-bi-data-protection-ga-and-introducing-new-capabilities/

QUESTION NO: 127

Your company plans to completely separate development and production assets such as datasets, reports, and dashboards in Microsoft Power BI.

You need to recommend an application lifecycle strategy. The solution must minimize access to production assets and prevent end users from viewing the development assets.

What should you recommend?

A.
Create production reports in a separate workspace that uses a shared dataset from the development workspace. Grant the end users access to the production workspace.

B.
Create one workspace for development. From the new workspace, publish an app for production.

C.
Create a workspace for development and a workspace for production. From the production workspace, publish an app.

D.
In one workspace, create separate copies of the assets and append DEV to the names of the copied assets. Grant the end users access to the workspace.

Answer: C

Explanation:

Use different work stages (Development, Test, and Production).

Deploy from the Development workspace.

Reference:

https://visualbi.com/blogs/microsoft/powerbi/application-lifecycle-management-power-bi/

QUESTION NO: 128

You have a collection of reports for the HR department of your company. The datasets use row-level security (RLS). The company has multiple sales regions that each has an HR manager.

You need to ensure that the HR managers can interact with the data from their region only. The HR managers must be prevented from changing the layout of the reports.

How should you provision access to the reports for the HR managers?

A.
Publish the reports to a different workspace other than the one hosting the datasets.

B.
Publish the reports in an app and grant the HR managers access permission.

C.
Add the HR managers as members of the existing workspace that hosts the reports and the datasets.

D.
Create a new workspace, copy the datasets and reports, and add the HR managers as members of the workspace.

Answer: A
Explanation:

Note: Row-level security (RLS) with Power BI can be used to restrict data access for given users. Filters restrict data access at the row level, and you can define filters within roles. In the Power BI service, members of a workspace have access to datasets in the workspace. RLS doesn't restrict this data access.

Reference:

https://docs.microsoft.com/en-us/power-bi/admin/service-admin-rls

QUESTION NO: 129

You create a report by using Microsoft Power BI Desktop.

The report uses data from a Microsoft SQL Server Analysis Services (SSAS) cube located on your company's internal network.

You plan to publish the report to the Power BI Service.

What should you implement to ensure that users who consume the report from the Power BI Service have the most up-to-date data from the cube?

A.
a subscription

B.
a scheduled refresh of the dataset

C.
an OData feed

D.
an On-premises data gateway

Answer: D
Explanation:

When you've created dynamic reports in Power BI Desktop, you can share them by publishing to your Power BI site. When you publish a Power BI Desktop file with a live connection to a tabular model to your Power BI site, an on-premises data gateway must be installed and configured by an administrator.

QUESTION NO: 130

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have several reports and dashboards in a workspace.

You need to grant all organizational users read access to a dashboard and several reports.

Solution: You create an Azure Active Directory group that contains all the users. You share each report and dashboard to the group.

Does this meet the goal?

A.
Yes

B.
No

Answer: B
Explanation:

Instead assign all the users the Viewer role to the workspace.

Note: The Viewer role gives a read-only experience to its users. They can view dashboards, reports, or workbooks in the workspace, but can't browse the datasets or dataflows. Use the Viewer role wherever you would previously use a classic workspace set to "Members can only view Power BI content".

Reference:

https://powerbi.microsoft.com/en-us/blog/announcing-the-new-viewer-role-for-power-bi-workspaces/

QUESTION NO: 131

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this scenario, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have several reports and dashboards in a workspace.

You need to grant all organizational users read access to a dashboard and several reports.

Solution: You assign all the users the Viewer role to the workspace.

Does this meet the goal?

A.
Yes

B.
No

Answer: A
Explanation:

The Viewer role gives a read-only experience to its users. They can view dashboards, reports, or workbooks in the workspace, but can't browse the datasets or dataflows. Use the Viewer role wherever you would previously use a classic workspace set to "Members can only view Power BI content".

Reference:

https://powerbi.microsoft.com/en-us/blog/announcing-the-new-viewer-role-for-power-bi-workspaces/

QUESTION NO: 132

You are building a Power BI report to analyze customer segments.

You need to identify customer segments dynamically based on the Bounce Rate across dimensions such as source, geography, and demographics. The solution must minimize analysis effort.

Which type of visualization should you use?

A.
funnel chart

B.
key influencers

C.
Q&A

D.
decomposition tree

Answer: B
Explanation:

The key influencers visual is a great choice if you want to:

See which factors affect the metric being analyzed.

Contrast the relative importance of these factors. For example, do short-term contracts affect churn more than long-term contracts?

Note: The key influencers visual helps you understand the factors that drive a metric you're interested in. It analyzes your data, ranks the factors that matter, and displays them as key influencers. For example, suppose you want to figure out what influences employee turnover, which is also known as churn. One factor might be employment contract length, and another factor might be commute time.

Reference:

https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-influencers

QUESTION NO: 133

You have an imported dataset that contains the following tables:

Date

Product

Customer

SalesFact

You need to reduce the size of the dataset before you publish it. The solution must minimize the number of tables in the dataset.

What should you do?

A.
Mark the Date table as the date table for the model.

B.
Change the storage mode of all the tables to **DirectQuery**.

C.
Replace DAX calculated columns with Power Query equivalents.

D.
Summarize data at the month level in the SalesFact query.

Answer: C

Explanation:

Avoid using calculated columns whenever possible, since they are not being optimally compressed. Instead, try to push all calculations to a data source (SQL database for example) or perform them using the Power Query editor.

Reference:

https://towardsdatascience.com/how-to-reduce-your-power-bi-model-size-by-90-76d7c4377f2d