MS POWER BI DATA ANALYSIS CERTIFICATION

**You have designed a star schema to simplify your data.**

**You need to understand the relationship between the tables in the star schema.**

**What is the relationship between the fact tables and dimension tables?**

One-to-many

**In Power BI Desktop, you plan to use M-language to define a common date table spanning a period of 10 years.**

**You need identify the M language function that would allow you to specify that rows in the table should represent consecutive days within the date range you designated. Your solution must minimize administrative effort.**

**Which syntax should you use?**   
#duration

The #duration function of the M language allows you to specify the datetime values that will be entered into individual rows of a date table. The #date function creates a date value based on the date parameters you specify. The List.Combine() combines multiple lists into one. List.Durations returns a list of count duration values, rather than dates.

You have a fact table that contains sales data and the following two date columns:

* OrderDate
* ShipDate

Both columns have a relationship to the Date column in the Calendar table, and DAX measures have been configured to use these relationships for calculations related to order or ship dates.

**You need to ensure that by default, the Calendar table does NOT filter the fact table, unless using a DAX measure that use these relationships.**

**What should you do?**

Disable Make this relationship active for both relationships.

You can have multiple inactive relationships between two tables in Power BI datasets. DAX measures can then use the USERELATIONSHIP function to activate a relationship for calculations. Relationship direction is not required for either the relationships or measures to work in this model setup. Only one active relationship can exist between two tables in a Power BI dataset. Applying a security filter in both directions isn’t required for this model setup.

You have a Power BI model.

You need to assign items to a display folder.

**Which three items can be assigned to a display folder? Each correct answer presents part of the solution.**

Tables and reports cannot be assigned a display folder. Columns, calculated columns, and measures can be assigned a display folder.

In Power BI Desktop, you need to create a role.

**Which two interfaces can you use? Each correct answer presents a complete solution.**

Model View and Report View

The Model view provides the ability to design and implement structure of a dataset and include the option to create a role. The Report view provides the ability to manage roles, including their creation. The Data view provides access to data within a dataset Power Query Editor provides the ability to transform and analyze data. The Page view is an option available from within the Report view and is intended to simplify designing and building reports.

You plan to use the calculated table functionality to add a duplicate table in Power BI Desktop.

**Which characteristics of the original table will be duplicated?**

A calculated table only duplicates data. Any model configurations such as column visibility or hierarchies must be recreated if needed.

You have a Power BI Desktop dataset that includes a table named Employees containing a row for each employee with the following columns:

* Employee ID
* Employee Name
* Manager ID
* Manager Name

You need to flatten the parent-child hierarchy in the Employees table by adding an extra column that will contain a listing of employee IDs for all direct and indirect managers of each employee.

**Which two Data Analysis Expression (DAX) functions should you use? Each correct answer presents part of the solution.**

PATH and PATHITEM

You are creating a Power BI dashboard.

You need to apply a custom theme to the dashboard from another Power BI dashboard theme.

**Which type of file should you use?**

To copy themes between workspaces, you can download and upload them as JSON files. Themes use the JSON file format, not CSV, YAML, or XML.

You have a Power BI dashboard that is comprised of pinned visuals that are taken from a variety of reports.

**Which three objects from a report page can be pinned to the dashboard?**

Individual filters and slicers cannot be pinned to a dashboard. This is because dashboards are designed to be an “at-a-glance” perspective. Reports are built to be filtered and interactive. Custom visuals, ribbon charts, and images can be pinned from a report page.

You need to ensure that you will be able to configure a Microsoft 365 group whose SharePoint Online document library is available to workspace users once the workspace is created.

**Which setting should you configure when creating the workspace?**

The Workspace OneDrive setting allows you to configure a Microsoft 365 group whose SharePoint Online document library is available to workspace users once the workspace is created. The Allow contributors to update the app for this workspace setting is meant to provide additional permissions for workspace contributors. The Develop a template app setting allows you to set up a template app workspace. The license mode allows you to choose between Pro, Premium per user, Premium per capacity, and Embedded licensing.

You manage a Power BI workspace in shared capacity. The workspace contains a report that uses a dataset named DS1.

You need to implement an incremental refresh of DS1.

**What should you do first?**

To implement an incremental refresh of the dataset, you **first need to define an incremental refresh policy, which, in turn, requires defining filter parameters.** An incremental refresh policy does not require upgrading to the Premium SKU. Publishing the dataset to the Power BI service is required for the incremental refresh policy to take effect, so it's the last step of setting up an incremental refresh.

You manage a Power BI workspace that includes a dataset with your company's sales data. You create a report that displays the sales data grouped by department.

You need to use row-level security to ensure that, once the report is published, employees in each department can only see the sales data for their department.

**What should you do first?**

To use row-level security to ensure that, once the report is published, employees in each department can only see the sales data for that department, you first need **to create a role and a corresponding DAX expression**.

You manage a Power BI workspace.

You need to delegate the task to update workspace metadata. The solution must use the principle of least privilege.

**Which role should you use?**

The Admin role is the only one that grants the permissions to update workspace metadata.

You have a collection of datasets and reports.

You need to share the datasets and report together. This solution must **NOT** send any email notifications to internal users after sharing.

**What should you create in the Power BI Service?**

Workspace apps can be installed automatically for any user in an organization, and without requiring notifications of installation. Deployment pipelines are used for moving artifacts between test, development, and production environments. Metrics are where you can create goals based off existing datasets. You can add members to a workspace, but they receive a notification that they’ve been added to the workspace.

You manage a Power BI workspace.

You need to delegate the task to schedule data refreshes. The solution must use the principle of least privilege.

**Which role should you use?**

The Contributor role is the least privileged role that grants the permissions to schedule data refreshes. The Member role grants the permissions to schedule data refreshes, but is more privileged than Contributor. The Admin role grants the permissions to schedule data refreshes, but is more privileged than Member. The Viewer role does not grant the permissions to schedule data refreshes.

You need to make changes to your data sources.

**Which three changes are supported by the Data Source Settings in the Power Query interface? Each correct answer presents a complete solution.**

The Data Source Settings in the Power Query interface supports editing permissions, clearing permissions, and modifying the path of the data source file. Any structural changes to a file, such as adding, removing, or renaming columns are not supported by the Data Source Settings in the Power Query interface.

You plan to add data to Power BI Desktop from a new data source. You are evaluating whether you should use the DirectQuery storage mode or the Import storage mode.

**What are two benefits of using DirectQuery instead of Import? Each correct answer presents a complete solution.**

DirectQuery minimizes local disk space use and eliminates the need for data refresh. DirectQuery is not fully supported with the Q&A and Quick Insights Power BI services. Both the DirectQuery and Import storage modes support per table configuration.

**What are two benefits of using Import instead of DirectQuery? Each correct answer presents a complete solution.**

The Import storage mode is fully supported with the Q&A and Quick Insights Power BI services. The Import storage, unlike DirectQuery does not minimize local disk space usage and does not eliminate the need for data refresh. Both the DirectQuery and Import storage modes support per table configuration

You plan to certify a Power BI dataset.

You need to identify at which level within your organization the permissions to certify a dataset are assigned.

Which level should you identify?

Admin users who have permissions to certify a dataset are defined in the Dataset Certification **tenant** admin setting.

You manage a Power BI workspace in shared capacity. The workspace contains a dataset named DS1. You plan to schedule refresh of DS1.

**What is the maximum number of data refreshes per day?**

The maximum number of refreshes per day for a Power BI workspace in a shared capacity is 8.

You manage a Power BI workspace in a shared capacity. The workspace contains a dataset named DS1. You plan to schedule a refresh of DS1.

**What is the number of consecutive refresh failures of DS1 that will automatically disable the refresh schedule?**

If there are 4 consecutive data set refresh failures, the refresh schedule will be automatically disabled.

You have a Power BI Desktop dataset based on a star schema data source.

You need to use Data Analysis Expression (DAX) to create a date table in the dataset and populate the table with a range of dates based on the earliest and latest date within the dataset.

**Which function should you use?**

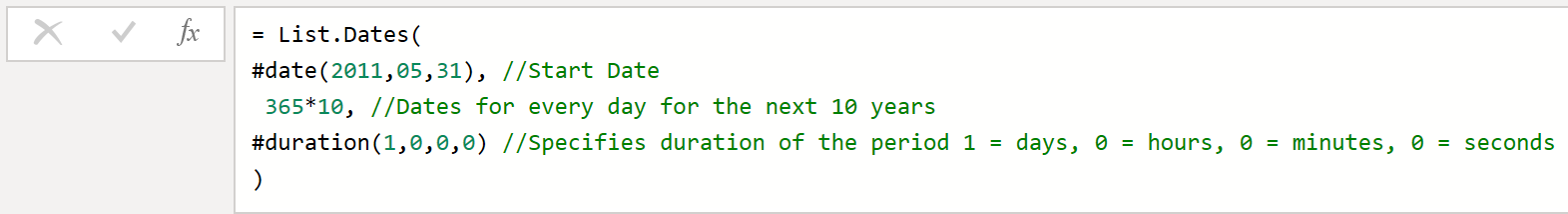
**The CALENDARAUTO function generates** a range of dates based on the earliest and latest date within the dataset. The CALENDAR function generates a range of dates, but it requires providing the start and end date. The DATE function returns the specified date in the datetime format. The DATEDIFF function returns an interval between two dates.

You have the following Power Query M formula that generates a range of dates to build a calendar table.

= List.Dates(#date(2020,05,31), 365, #duration(1,0,0,0))

**What is the resulting date range?**

The #date element designates the starting date, 365 designates the duration counter, and #duration(1,0,0,0) designates the duration interval in days, so this formula results in a listing of days starting on May, 31, 2020 and ending 365 days later.



You need to develop a quick measure in Power BI Desktop.

**Which two elements can you use? Each correct answer presents a complete solution.**

When creating a quick measure in Power BI Desktop, you apply **calculations to fields**. You do not explicitly create a DAX query, but you choose calculations and fields, which result in automatic generation of a DAX query. Conditional columns are separate from quick measures. Unlike quick measures, they create a value for each row in a table and are stored in the .pbix file. Power Query M functions are not directly accessible from the Quick Measure interface.

In Power BI Desktop, you need to create a measure.

**Which two interfaces can you use? Each correct answer presents a complete the solution.**

**The Report view** provides the ability to create measures. To create a measure, use the context sensitive menu of the Fields list or the Calculations section of the ribbon. **The Data view** provides access to data within a dataset and includes the option to create a measure in the Calculations section of the ribbon. Model view, Page view, and Power Query Editor do not include the option to create a measure.

You plan to get data for a Power BI dataset from flat files.

You need a location type that requires you to provide credentials of a Microsoft account.

**Which location type should you recommend?**

**A personal OneDrive account** provides the ability to automatically synchronize flat files residing in a user's OneDrive and Power BI datasets. Since it relies on OneDrive access, it requires the user's credentials of the corresponding Microsoft account.

The OneDrive - Business option uses Azure Active Directory credentials.

The SharePoint – Team Sites option uses the same Azure Active Directory credentials as the ones used to access SharePoint Online. For the local file option, no additional credentials are required to access them.

You have multiple Excel files stored in a folder synced with OneDrive for Business.

You need to import data from the files. The solution must **NOT** use a data gateway.

**Which type of connector should you use?**

**A SharePoint folder** is the only connector that will allow an import of multiple Excel (or CSV) files stored in a OneDrive for Business folder, without using a data gateway.

While you can connect to the folder on an on-premises device, it would require a data gateway to refresh in the service.

An Excel workbook would only connect to a single Excel file and would also require a data gateway.

A SharePoint list connector only connects to SharePoint lists and cannot connect to Excel files.

You plan to publish a dataset from Power BI Desktop.

You need to ensure that a server name can be changed after the dataset has been published to the Power BI Service.

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

Create a parameter.  
From the Data source settings, update the server source to use a parameter.

**A parameter** is the only part of a query that can be updated or changed in the Power BI service, by accessing the dataset settings. **Updating the server source to use a parameter** will update all existing queries pointing to the current server to instead use a parameter with that server name. This parameter can now be changed once this dataset is published to the Power BI service.

You create a Power BI data source which uses a SQL SELECT statement. The SQL statement queries multiple tables in a SQL Server database and includes subqueries.

When importing data from the data source into Power BI, you receive the following error message: “Timeout expired.”

You verify that network connection to the SQL Server has sufficient available bandwidth and low latency.

You need to minimize the occurrences of the timeout issues indicated by the message.

**What should you do?**   
Divide the SQL statement into separate data sources.

**Dividing the SQL statement into separate data sources** would minimize the amount of processing on the SQL Server side. This would minimize or even eliminate the timeout issues.

Groupings, aggregations, and using nested queries would either have no impact on timeout issues or further increase the amount of processing on the SQL Server side, resulting in more frequent timeout issues.

When importing data from an Excel workbook into Power BI, you receive the error message: “We couldn't find any data formatted as a table.”

**What should you do to resolve the error?** In the Excel workbook, select the data you want to import, press Ctrl+T, and save the change.

The error message indicates that the Excel workbook does not contain a table. To create it, in the Excel workbook, you need to select the data you want to import, press Ctrl+T, rather than Ctrl+F, and save the change. Organizational and template apps provide a way to implement functionality within Power BI, but, in this case, the issue is caused by an absence of a table in the Excel workbook, so installing an app would have no effect on resolving the issue.

You create a Power BI data source which uses a SQL SELECT statement. The SQL statement queries multiple tables in a SQL Server database and includes subqueries.

After you import data from the data source into Power BI, you notice that one of the columns in the resulting dataset appears blank. You verify that the source table does include data.

**What should you do to resolve the issue?** Use the CAST function in the SQL statement.

The issue indicates that Power BI is incorrectly interpreting the data type used by the source column. **To resolve it, you need to explicitly specify the intended data type, which can be done by using the CAST function**.

DATALENGTH displays the number of bytes used to represent an expression. Clearing permissions could prevent Power BI from being able to access the target database. Setting the privacy levels of the data source would have no impact on addressing the issue of missing data.

You create a Power BI Desktop data source by importing an Excel file that contains 10,000 rows.

You plan to identify data anomalies within the data source.

You need to ensure that column distribution considers all rows in the Excel file.

**What should you do?**   
In the Power Query Editor window, modify the profiling status.

By default, Power BI uses top 1,000 rows for profiling. To ensure that column distribution considers all rows in the Excel file, **you need to modify the Power Query Editor profiling status setting**. The Power Query Editor settings, Advanced settings, and Permissions settings have no bearing on the profiling characteristics.

You create a Power BI Desktop data source by importing an Excel file.

You plan to identify data anomalies within the data source.

**Which interface should you use to display the column distribution and column quality graphs?**   
Power Query Editor

**Power Query Editor provides the ability to display the column distribution and column** **quality graphs**. Data view provides access to data within a dataset. Model view provides access to the data model of a dataset. Advanced Editor of Power Query Editor provides the ability to work with the M code used for shaping data in Power Query Editor.

You have a query named FactSales that retrieve a table to a SQL Server table.

You need to update the query to prevent new columns that may be added to the table in the future from getting imported during scheduled refreshes.

**Which two applied steps can you use in Power Query Editor to achieve the goal? Each correct answer presents a complete solution.** Choose Columns, Remove Other Columns

**Using the Choose Columns and Remove Other Columns options will allow you to explicitly select the columns that you want to keep**. Enforcing the requirement that new columns will not be automatically added in the future. Using Remove Columns will delete the selected columns in the table, but new columns that get added in the future will still be imported automatically. Transpose treats rows as columns, and columns as rows. It will not limit the number of columns being imported.

You connect Power Query Editor to a database table.

You need to remove the Row ID column. Your solution must ensure that new columns do NOT display in the table model during a scheduled refresh in the future.

**What transformation should you use?** Only the **Select Columns** command will let you choose columns to keep, delete the columns you do not want, and prevent new columns from showing up in the table in the future.

You plan to build a Power BI dashboard and set up alerts that will notify you when data presented in the visuals on the dashboard reach specific thresholds.

**Which three types of visuals support the alert functionality? Each correct answer presents a complete solution.**

Alerts are available **with KPI visuals, gauges, and cards**. Treemaps and waterfall visuals do not support alerts.

You have a Power BI dataset.

You need to set the dataset as discoverable.

**Which two configurations will allow the dataset to be marked as discoverable? Each** correct answer presents a complete solution. A certified dataset can be configured to be discoverable for users without access to request permissions to access. A promoted dataset can be configured to be discoverable for users without access to request permissions to access. RLS is not required on a dataset to become discoverable. Premium (capacity or shared) is not required to make a dataset discoverable.

You need to prevent a hidden date tables from being auto generated by Power BI Desktop for every date or datetime data type column in a dataset.

**What should you do?**  
From the Current File options in Power BI Desktop, disable Auto Date/Time for new files.

Disabling Auto Date/Time for new files from the Current File options will disable all Auto Date/Time tables in this dataset.

Enabling Mark as date table for the Calendar table will only disable the auto datetime tables for this table. Other date or datetime columns in the model will still have auto datetime tables associated with them. Disabling the Global option Auto Date/Time for new files means that new files will no longer have Auto Date/Time enabled, but files in the current dataset will still have it enabled until it is disabled. Changing the data category will not impact the auto date table feature.

You need to create a new hierarchy in Power BI Desktop.

**What should you do first?**

**To create a new hierarchy in Power BI Desktop, you must select Create hierarchy from the Model view.** The option to create hierarchies from the Report view was removed as an option in 2021 because too many hierarchies were being accidentally created during development. You cannot drag-and-drop one field onto another to create a new hierarchy in the model view. You can only use this method to add additional fields to an already existing hierarchy.

You need to use DAX quick measures to generate results to use in a report.

**Which type of DAX quick measure calculations will NOT work against a DirectQuery table?**   
time intelligence

**Time intelligence functions** have performance implications and are disabled for quick measures against DirectQuery tables. Mathematical operations, aggregate per category, and X-functions are all supported against DirectQuery.

**You can't create time intelligence quick measures when working in DirectQuery mode**. The DAX functions used in these quick measures have performance implications when translated into the T-SQL statements that are sent to your data source.

You are designing a data model for Power BI Desktop based on data stored in Azure SQL Database.

You need to reduce the model size.

**What should you do?**

**Setting the Storage Mode property of tables to Direct Query reduces the model size** since only schema of the data source is stored locally. Setting the Storage Mode property of tables to Import will import data into Power BI desktop, effectively increasing the model size. Configuring Query reduction option Slicers settings controls whether to instantly apply slicer changes and add an Apply button to each slicer. Configuring Query reduction option Filters settings allows you to apply basic filter changes.

You are designing a data model in Power BI.

You need to avoid introducing ambiguity into your data model design.

**Which type of cardinality should you avoid?**

**Many-to-many** cardinality in Power BI should be avoided due to ambiguity, resulting from the presence of non-unique values.

One-to-one cardinality in Power BI should be avoided and, if present, should be eliminated by combining the related tables. However, this type does not introduce ambiguity. One-to-many and many-to-one cardinality are two common cardinality types, used for the relationships between a fact and dimension tables.

You are creating a report in a Power BI Desktop by using a dataset that contains sales data.

You need to create a measure that always provides the value of total sales for the year 2022, regardless of which year is selected in any visual in the same report.

**Which DAX function should you use in combination with the SUM function to override the context and provide the result?**

The CALCULATE function provides the result of the calculation with the ability to override the context.

The IGNORE function modifies the behavior of the SUMMARIZECOLUMNS function by omitting specific expressions from the BLANK/NULL evaluation.

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

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

You have a Power BI Desktop model.

You need to determine when to use implicit and explicit measures.

**What is a feature of an implicit measure that explicit measure does NOT have?**

Implicit measures can select from one of nine aggregations when placed in the Values well of a visual. Both Implicit and Explicit measures can be used as a Drillthrough field, to create quick measures, and with Field Parameters.

Implicit measures allow the report author to start with a default summarization technique and lets them modify it to suit their visual requirements.

Numeric columns support the greatest range of aggregation functions:

* Sum
* Average
* Minimum
* Maximum
* Count (Distinct)
* Count
* Standard deviation
* Variance
* Median

You have a Power BI Premium per user workspace.

**What is the maximum number of refreshes that can be scheduled each day?**

In a Premium per user workspace the limit is 48 refreshes per day for a dataset.

You have a Power BI Desktop dataset that includes a table named Warehouse. The Warehouse table includes a column named Inventory Count, which contains the current number of items for each row, of a particular type on a given day.

You have the following Data Analysis Expression (DAX) query that calculates the sum of all values in the Inventory Count column of the Warehouse table:

Current Inventory Count =

CALCULATE (

SUM ( 'Warehouse'[Inventory Count] ))

You need to ensure that Current Inventory Count returns only the current total number of inventory items, rather than the sum of all inventory items that includes item counts from previous days.

**What DAX function should you include in the query?**

Select only one answer.

LASTDATE

The LASTDATE function will ensure that the SUM function applies only to the last date of the time period, resulting in a semi-additive behavior. The DISTINCTCOUNT function counts the number of distinct values in a column, which results in additive behavior. The CALENDAR function returns a table with a column named Date that contains a contiguous set of dates based on the start date and end date that you specify. The CALENDARAUTO function returns a table with a column named Date that contains a contiguous set of dates based on data in the model.

You decide to remove unnecessary columns from your data model.

**What are two potential performance benefits of doing this? Each correct answer presents a complete solution.**

Fewer columns mean there is less data to import, and will reduce the model size and decrease the time it takes to refresh the model. Since row counts aren’t changing, the calculation speed of any existing DAX measures won’t change. Report page load times are primarily determined by number of visuals (objects) on the page, and DAX performance. Neither of which are impacted by unnecessary model columns.

You plan to get data for a Power BI dataset from flat files.

You need a location type to store the files. The data must **NOT** automatically synchronize between the original file and the dataset.

**Which location type should you recommend?**

The local file option will result in importing the file contents without providing automatic synchronization between the original file and the dataset.

SharePoint – Team Sites, personal OneDrive accounts, and OneDrive for Business provide the ability to automatically synchronize flat files and Power BI datasets.

You have a Power BI dataset that gets data from a table in a SQL Server database.

**From which in Power BI Desktop can you modify the storage mode of the table?**

The storage mode of a table in Power BI Desktop is configurable from the Model view, not the Data or Report view. Page view is an option available from within the Report view.

You have a query that retrieves data from a table that contains more than 8,000 rows of data.

In Power Query Editor, you notice that the column statistics for each column shows a count of exactly 1,000.

You need to ensure that the column statistics for each column shows the statistics based on all rows that are returned by the query.

**What should you do?**   
From the query window, select **Column profiling on the entire dataset**. Selecting column profiling for the entire dataset will change the column profiler to analyze the entire query dataset. Adding a Table.Buffer applied step will only cache the entire query in memory during refresh. The query load type in the model will not impact how many rows are used by the column profiler. Using a Top N row count applied step or applying a parameter will not change how the column statistics feature calculates.

You create a Power BI Desktop data source by importing a Cosmos DB for NoSQL item collection.

You connect to the Cosmos DB account, database, and collection, but the preview displays only a list of items named Record.

You need to select individual fields from items in the collection that you want to load into Power BI Desktop.

**What should you do first?**  
Open Power Query Editor. This behavior is by design. The Preview pane in Power BI shows a list of Record items when connecting to a collection of JSON formatted items. To view individual item fields, open the Power Query window and use the Expander button on the right hand side of the Column1 header to display the list of fields. Switching to the model view would not benefit us in any way, since the data has not been imported yet. Retrieving Cosmos DB account key or connection string at this point is meaningless, since that was required to connect to Cosmos DB account, which has been already completed.

You plan to create a report in Power BI Desktop.

You need to create a visualization to displays a running total. The solution must meet the following requirements:

* The initial and the final value columns must start on the horizontal axis.
* The intermediate values must be floating columns.

**Which type of visualization should you use?**

A waterfall visualization is a chart that displays a running total, with the initial and the final value columns starting on the horizontal axis while the intermediate values are floating columns. A combo visualization is a chart that combines a column chart and a line chart and can have one or two Y axes. A funnel visualization is a chart that that has sequential connected stages, where items flow sequentially from one stage to the next. A scatter visualization is a chart with two value axes, with one set of numerical data along a horizontal axis and another set of numerical values along a vertical axis.

You need to create a custom Python visual by using Power BI Desktop.

**What do you need to do first?**   
Enable the script visuals option in the Visualization pane of Power BI Desktop.

Enabling the script visuals option in the Visualization pane of Power BI Desktop is required before creating custom Python visuals in Power BI Desktop. Installing Python is not required. Configuring global Python scripting options in Power BI Desktop is not required to create Python visuals. The ability to create a custom Python visual by using Power BI Desktop has no dependency on enabling preview features.

You have a report in Power BI.

You need to adjust the behavior of the report by editing interactions.

**Which two types of interaction behavior can you change between visuals? Each correct answer presents a complete solution.**

A filter will show you the filtered data in this visual. Highlight is the default interaction between visuals. It shows you both the unfiltered and filtered values in the visual, for comparison purposes. Drillthrough is a page navigation experience that takes you from one page to another plus applies a set of filters to page navigated to. Expand is a way to navigate down a level using the hierarchy controls.

You have a visual that is being cross-highlighted.

**By default, what data will be displayed in a report tooltip?**

By default, report tooltips will apply the filter from the cross-highlighted data into the tooltip. Report page tooltips need to be manually created, and are not assigned to a visual by default.

You plan to use Power BI Desktop to analyze sales data of your company.

You need to identify two types of data you will be able to use for creating bins that group the sales data.

**Which two data types should you identify? Each correct answer presents a complete solution.** Date/time and numeric data types support bins-based grouping. Binary, Boolean, and text data types do not support bins-based grouping.

Which native AI visual helps explain correlations for a metric within the dataset? Key influencers visual

The Key influencers visual helps you understand correlated factors impacting a particular metric. The Q&A visual allows end-users to ask natural language questions to create AI generated charts based on the questions.

The Decomposition Tree visual lets you visualize data between multiple dimensions and drill down in any order. The Smart Narrative visual lets you combine natural language text with metrics from your model in sentence forms.

You have an Azure SQL database that contains two tables named SalesOrders and SalesOrderDetails.

You load the SalesOrders and SalesOrderDetails tables into Power BI Desktop. The tables have a relationship based upon the sales order ID.

You need to combine the two tables into one table. The solution must meet the following requirements:

* There is a row for every sales order detail row in the resulting table, even if there is no corresponding sales order row.
* For every sales order detail row, the row in the resulting table include the corresponding sales order row data if the sales order row exists.
* Any sales order row data that does not have corresponding sales order details is not included in the resulting table.

**What should you do to combine the two tables?**

You import an Excel file into Power BI Desktop and begin to analyze the data in Power Query Editor.

You need to identify outliers in a text column within the data source.

**Which information should you use from Power Query Editor?**

the top and bottom entries in Value distribution

The top and bottom entries in Value distribution identify outliers, which appear, respectively, the greatest and the smallest number of times in that column. The value of the Distinct entry in Column statistics indicates the total count of different values. The value of the Unique entry in Column statistics indicates the total count of different values that appear only once. The min and max values in the Column profile of a text column designate the entries which appear, respectively, first and last in alphabetical order.

You transform a Power BI Desktop data source imported from an Excel file.

You need to modify the M code used for data shaping.

**Which interface should you use?**   
Advanced Editor in Power Query Editor

Advanced Editor of Power Query Editor provides the ability to work with the M code used for shaping data in Power Query Editor. Data view provides access to data within a dataset. Model view provides access to the data model of a dataset. Power Query Editor provides the ability to apply transformations, but direct M code edits require using Advanced Editor of Power Query Editor.

You have a table that has a column named Country and columns for each month of sales data. The names of the sales data columns use a format of Month Year, for example January 2022.

You need to reshape the table to have a single column for sales data.

A new column should also be added and contain the relevant month year for each row of data.

**What should you do from the Power Query Editor?**   
Select the Country column and then select **Unpivot Other Columns**. Selecting Unpivot Other Columns will unpivot all current and future month/year columns into a new sales data column. Transposing treats rows as columns, and columns as rows. It will not create a single sales data column. Selecting Unpivot Columns in the first sales data column will successfully unpivot these columns into a new single column for sales data, but the other sales month/year columns will not be included in the new sales column. Pivoting the data takes values on rows in a column and turns them into new columns.

You have a fact table that contains sales data.

The fact table includes a SalesDate column formatted as a Date data type. Auto date/time setting is disabled in both global and current file options.

You load the fact table into Power BI Desktop.

You need to ensure that you are able to analyze data on a yearly, quarterly, monthly, weekly, and daily basis. Your solution must minimize the model size and administrative effort.

**What should you do?**   
Add a separate date dimension table.

Adding a separate date dimension table that includes year, month, and week information is the optimal approach which provides the required functionality, while minimizing the model size and administrative effort. Adding a year, month, and week columns to the fact table would increase the amount of administrative effort. Enabling the Auto date/time global or current file option would increase the model size. In addition, that would not provide the ability to describe weekly time periods (only year, quarter, month, and day).

Your company has a SharePoint server located in a datacentre in Montreal.

You plan to create a report in the Power BI service that will use Microsoft Excel files stored on the SharePoint server.

You need to recommend a solution to ensure that the dataset for the report can automatically refresh daily.

**What should you include in the recommendation?**  
An on-premises data gateway

An on-premises SharePoint server requires the use of a Power BI gateway since it’s an on-premises data source. VPN-based solutions would provide connectivity to an Azure virtual network, but not Power BI service. Azure Data Box is a solution for migrating data to Azure, which is not applicable in this scenario.

You have a query that retrieves data from a table that contains more than 8,000 rows of data.

In Power Query Editor, you notice that the column statistics for each column shows a count of exactly 1,000.

You need to ensure that the column statistics for each column shows the statistics based on all rows that are returned by the query.

**What should you do?**

From the query window, select **Column profiling on the entire dataset**.

Selecting column profiling for the entire dataset will change the column profiler to analyze the entire query dataset. Adding a Table.Buffer applied step will only cache the entire query in memory during refresh. The query load type in the model will not impact how many rows are used by the column profiler. Using a Top N row count applied step or applying a parameter will not change how the column statistics feature calculates.

You import an Excel file into Power BI Desktop and begin to analyze the data in Power Query Editor.

You need to identify outliers in a text column within the data source.

**Which information should you use from Power Query Editor?**

The top and bottom entries in Value distribution identify outliers, which appear, respectively, the greatest and the smallest number of times in that column. The value of the Distinct entry in Column statistics indicates the total count of different values. The value of the Unique entry in Column statistics indicates the total count of different values that appear only once. The min and max values in the Column profile of a text column designate the entries which appear, respectively, first and last in alphabetical order.

You have an Excel spreadsheet that contains three columns labeled Year, 2021, and 2012. The entries in rows for the first column consists of names of the individual months in the year while the other two columns contain the sales amount for each month for the corresponding year.

You import data from the Excel spreadsheet into Power BI Desktop.

You need to transform the data so it will consist of three columns, with the first one containing month, the second containing year, and the third containing the sales amount for that month and year.

**Which transformation should you use first?**

Selecting Unpivot will allow you to shape the current table into the one with the year, month, and sales amount columns, which will need to be renamed afterwards. Pivot would be applicable in the opposite scenario, in which flat data needs to be reorganized into one containing aggregate values for each unique value in each column. Transposing would switch tables and columns. Removing columns would result in a table with insufficient data to perform unpivot.

You import data from a .csv file to Power Query Editor. The data includes a column named ZIP that contains zip codes.

You notice that Power Query Editor automatically applies the Whole Number data type to the ZIP column.

You need to ensure that the ZIP column uses the Text data type.

**What should you do?**

To correctly update the data to text you need to replace the number type conversion with a text conversion, and to keep all other data type column transformations. This needs to be done in the Power Query Editor.

You have a Power BI data source that contains the following tables:

* Category: Lists the product category
* Subcategory: Lists the product subcategory
* ProductName: Lists the name of the product

You need to optimize the star schema model for the Power BI dataset.

**How should the tables be imported into the model?**

A star schema should have a single table for each dimension or product, so using the combine command is what is required to create a single product table and aim towards a star schema design.

You have Power BI Desktop.

You need to create DAX calculated columns and measures.

**In which two places can a DAX calculated column be used, but a DAX calculated measure cannot be used? Each correct answer presents a complete solution.**

Unlike a measure, a calculated column can be used in a slicer to place filter options on the report page. DAX measures cannot be placed in the “Filters on this page” well. They can only be placed per visual, in the “Filters on this visual” well of the Filters Pane. Both DAX columns and measures may be used as a visual-level filter. Both DAX columns and measures can be used in the Drillthrough well.

You decide to remove unnecessary columns from your data model.

**What are two potential performance benefits of doing this? Each correct answer presents a complete solution.**

Fewer columns mean there is less data to import and will reduce the model size and decrease the time it takes to refresh the model.

Since row counts aren’t changing, the calculation speed of any existing DAX measures won’t change. Report page load times are primarily determined by number of visuals (objects) on the page, and DAX performance. Neither of which are impacted by unnecessary model columns.

You decide to start using variables when creating DAX formulas.

**What are two benefits of using variables in DAX measures over using original expressions? Each correct answer presents a complete solution.**

Variable names are often shorter than the original expressions, and the final variable returned at the end of the measure will be more readable with variable names included. Variables cache the defined calculation, allowing it to be reference multiple times without additional impacts from recalculations. The functions in DAX are universal, and there are no specific functions that can only be used within variables. The data source connection is set in the model, and cannot be changed from within a DAX measure.

You plan to create a report in Power BI Desktop that will display the relationship between the number of orders and the number of orders shipped by product category.

You need to identify the visual that will clearly identify outliers in the data set by displaying them away from the bulk of data.

**Which visual should you use?**

A scatter visual displays a relationship between values associated with two axes: one set of numerical data along a horizontal axis and another set of numerical values along a vertical axis. It is particularly suitable for identifying outliers because it displays them away from the bulk of data. A card visual displays a single data point. A treemap visual displays data as a set of nested rectangles. A gauge visual displays a circular arc including a single value that measures progress toward a goal or target.

You have Power BI Desktop.

You need to create data for your model items.

**Data for which two model items can be created using the DAX language? Each correct answer presents a complete solution.**

Calculated tables are generated with DAX queries. Numeric range parameters create a table and measure, both generated with DAX queries. The enter data button creates a manual table using the M language and Power Query. Display folders are a way to visually organize measures, columns, or hierarchies. DAX is not used to create them.

· Use Contributor role only for **developers**

· Use Member role for **deployment groups**

· Use Admin role for the **workspace admins**

· Use Viewer role for **business users/end users**