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1. Data analysis describes the various elements that interact with one another in order to provide, manage, store, organize, analyze, and share data. **1 / 1 point**

   - ○ True
   - ◉ False

   Correct
   Correct! Data analysis is the collection, transformation, and organization of data in order to draw conclusions, make predictions, and drive informed decision-making.

2. Billings Upholstery has defined a problem it needs to solve: Find a more environmentally friendly way to produce its furniture. A data analyst gathers relevant data, analyzes it, and uses it to draw conclusions. The analyst then shares their analysis with subject-matter experts from the manufacturing team, who validate the findings. Finally, a plan is put into action. This scenario describes what process? **1 / 1 point**

   - ○ Identification of trends
   - ◉ Data-driven decision-making
   - ○ Customer service
   - ○ Data science

   Correct
   Correct! This company has put data at the heart of its business strategy in order to achieve data-driven decision-making.

3. A smoothie shop hires a data analyst to find out why a competitor has had more customers during the past two weeks. In addition to analyzing sales data, the analyst wonders if there might be other factors or circumstances causing the increase in customers. They discover that the competitor has given out coupons around the neighborhood. The coupons expire at the end of the month, so this added environmental factor should be temporary. The analyst used curiosity and their understanding of context to help solve this problem. **1 / 1 point**

   - ◉ True
   - ○ False

   Correct
   Correct! The data analyst used their curiosity and ability to understand context.

4. Analytical thinking involves five key aspects, including correlation. Correlation involves figuring out all of the specifics that help you execute a plan. **1 / 1 point**

   - ○ True
   - ◉ False

   Correct
   Correct! Correlation involves being able to identify a relationship between two or more pieces of data.

5. The goal of gap analysis is to get to the root cause of a problem. **1 / 1 point**

   - ○ True
   - ◉ False

   Correct
   Correct! Gap analysis is a method for examining and evaluating how a process works currently in order to get where you want to be in the future. The five whys is a process for getting to the root cause of a problem.

6. In which stage of the data life cycle does a business decide what kind of data it needs, how the data will be managed, and who will be responsible for it? **1 / 1 point**

who will be responsible for it?

- (●) Plan
- ( ) Capture
- ( ) Analyze
- ( ) Manage

✓ **Correct**
Correct! During planning, a business decides what kind of data it needs, how it will be managed throughout its life cycle, who will be responsible for it, and the optimal outcomes.

7. The destroy stage of the data life cycle might involve which actions? Select all that apply. **0.75 / 1 point**

- [x] Using data-erasure software

✓ **Correct**
Correct! Destroying data in order to keep it secure is part of the final stage of the data life cycle.

- [x] Shredding paper files

✓ **Correct**
Correct! Destroying data in order to keep it secure is part of the final stage of the data life cycle.

- [x] Archiving data for future use

! **This should not be selected**
Incorrect. Review the section on the data life cycle for a refresher.

- [ ] Uploading data to the cloud

8. A company takes the insights provided by its data analytics team, validates them, and finalizes a strategy. They then implement a plan to solve the original business problem. This describes the share step of the data analysis process. **1 / 1 point**

- ( ) True
- (●) False

✓ **Correct**
Correct! The act phase is when insights are put into action.

9. A set of instructions that performs a specific calculation using spreadsheet data is called____. **1 / 1 point**

- ( ) an operation
- ( ) a function
- ( ) a program
- (●) a formula

✓ **Correct**
Correct! A formula is a set of instructions that performs a specific calculation using the data in a spreadsheet.

10. A real estate company needs to hire a human resources assistant. The owner asks a data analyst to help them decide where to advertise the job opening. The analyst learns that the majority of human resources professionals are women, validates this finding with research, and targets ads to a women's community college. This is fair because the analyst conducted research to make sure the information about gender breakdown of human resources professionals was accurate. **1 / 1 point**

- ( ) True
- (●) False

✓ **Correct**
Correct! Fairness means ensuring that analysis doesn't create or reinforce bias. As a data analyst, it's important to help create systems that are fair and inclusive to everyone.

11. **Scenario 1, question 11-15** **1 / 1 point**

You've just started a new job as a data analyst. You're working for a midsized pharmacy chain with 38 stores in the American Southwest. Your supervisor shares a new data analysis project with you.

She explains that the pharmacy is considering discontinuing a bubble bath product called Splashtastic. Your supervisor

wants you to analyze sales data and determine what percentage of each store's total daily sales come from that product. Then, you'll present your findings to leadership.

You know that it's important to follow each step of the data analysis process: ask, prepare, process, analyze, share, and act. So, you begin by defining the problem and making sure you fully understand stakeholder expectations.

One of the questions you ask is where to find the dataset you'll be working with. Your supervisor explains that the company database has all the information you need.

Next, you continue to the prepare step. You access the database and write a query to retrieve data about Splashtastic. You notice that there are only 38 rows of data, representing the company's 38 stores. In addition, your dataset contains six columns: Store Number, Average Daily Customers, Average Daily Splashtastic Sales (Units), Average Daily Splashtastic Sales (Dollars), and Average Total Daily Sales (All Products).

Considering the size of your dataset, you decide a spreadsheet will be the best tool for your project. You proceed by downloading the data from the database. Describe why this is the best choice.

- (●) Spreadsheets work well for processing and analyzing a small dataset, like the one you're using.
- ( ) Databases can't be used for analysis.
- ( ) Spreadsheets are most effective when working with queries.
- ( ) Only spreadsheets let you download and upload data.

✓ **Correct**
Correct! A spreadsheet is a smart choice when working with a dataset of 38 rows and six columns.

12. **Scenario 1 continued** — 0 / 1 point

You've downloaded the data from your company database and imported it into a spreadsheet. Click here to see your spreadsheet.

Now, it's time to process the data. As you know, this step involves finding and eliminating errors and inaccuracies that can get in the way of your results. While cleaning the data, you notice that information about Splashtastic is missing in row 16. Select the best course of action.

- (●) Call the store associated with row 16, and ask the sales associate how Splashtastic has been selling.
- ( ) Identify another store with similar customer and sales numbers, and use their data about Splashtastic.
- ( ) Email your supervisor to ask for guidance.
- ( ) Delete row 16 from your dataset so the missing data doesn't get in the way of your results.

! **Incorrect**
Incorrect. Review the section on data analysis tools for a refresher.

13. **Scenario 1 continued** — 1 / 1 point

Once you've found the missing information, you analyze your dataset. You use a formula to determine how much of each store's daily sales come from sales of Splashtastic. Click here to see your updated spreadsheet.

During analysis, you create a new column F. At the top of the column, you add the attribute Average Percentage of Total Sales - Splashtastic. Select the correct definition for an attribute.

- ( ) A headline or subhead
- ( ) All of the characteristics of something contained in a table
- (●) A characteristic or quality of data used to label a column
- ( ) An observation of data within a column

✓ **Correct**
Correct! An attribute is a characteristic or quality of data used to label a column.

14. **Scenario 1 continued** — 0 / 1 point

Next, you determine the average percentage that Splashtastic sales represent for all 38 stores. To do this, you use the AVERAGE function in cell H2. The correct way to write that function is =AVERAGE (E:F).

- (●) True
- ( ) False

! **Incorrect**
Incorrect. Review the section on spreadsheet basics for a refresher.

15. **Scenario 1 continued** — 1 / 1 point

Next, you create a slideshow, which includes a data visualization to highlight that Splashtastic represents 1.24% of total

sales on average. You've reached which phase of the data analysis?

- Analyze
- Act
- Manage
- Share

Correct
Correct! The share phase involves creating data visualizations, preparing your presentation, and communicating your findings to stakeholders.

16. **Scenario 2, questions 11-20** — 1 / 1 point

You've been working for the nonprofit National Dental Society (NDS) as a junior data analyst for about two months. The mission of the NDS is to help its members advance the oral health of their patients. NDS members include dentists, hygienists, and dental office support staff.

The NDS is passionate about patient health. Part of this involves automatically scheduling follow-up appointments after crown replacement, emergency dental surgery, and extraction procedures. NDS believes the follow-up is an important step to ensure patient recovery and minimize infection.

Unfortunately, many patients don't show up for these appointments, so the NDS wants to create a campaign to help its members learn how to encourage their patients to take follow-up appointments seriously. If successful, this will help the NDS achieve its mission of advancing the oral health of all patients.

Your supervisor has just sent you an email saying that you're doing very well on the team, and he wants to give you some additional responsibility. He describes the issue of many missed follow-up appointments. You are tasked with analyzing data about this problem, and presenting your findings using data visualizations.

An NDS member with three dental offices in Maine offers to share its data on missed appointments. So, your supervisor uses a database query to access the dataset from the dental group. The query instructs the database to retrieve all patient information from the member's three dental offices, located in zip code 04000.

This is the query your supervisor used.

```
SELECT *
FROM dental_data_table
WHERE = 04000
```

- True
- False

Correct
Correct! In the correct query, there would be an asterisk (*) to tell the database to retrieve all data, FROM to indicate the table, and WHERE Zip_code = 04000 to tell the database to include data that matches the 04000 zip code.

17. **Scenario 2 continued** — 1 / 1 point

The dataset your supervisor retrieved and imported into a spreadsheet includes a list of patients, their demographic information, dental procedure types, and whether they attended their follow-up appointment. Click here to view the dataset.

The patient demographic information includes data such as age and gender. As you're learning, it's your responsibility as a data analyst to make sure your analysis is fair. Which aspect of patient demographics might get in the way of fairness?

- The dataset indicates which dental procedure the patients had performed.
- The dataset represents people who are single.
- The dataset contains patient identification numbers.
- The dataset includes people who all live in the same zip code.

Correct
Correct! As you're learning, it's your responsibility as a data analyst to make sure your analysis is fair. Although many zip codes do reflect diverse populations, a better choice would be to include data about people who live in multiple zip codes.

18. **Scenario 2 continued** — 1 / 1 point

As you're reviewing the dataset, you notice that there are a disproportionate number of senior citizens. So, you investigate further and find out that this zip code represents a rural community in Maine with about 800 residents. In addition, there's a large assisted-living facility in the area. Nearly 300 of the residents in the 04000 zip code live in the facility.

You recognize that's a sizable number, so you want to find out if age has an effect on a patient's likelihood to attend a follow-up dental appointment. You analyze the data, and your analysis reveals that older people tend to miss follow-ups more than younger people.

So, you do some research online and discover that people over the age 60 are 50% more likely to miss dentist

So, you do some research online and discover that people over the age 60 are 30% more likely to miss dentist appointments. Sometimes this is because they're on a fixed income. Also, many senior citizens lack transportation to get to and from appointments.

With this new knowledge, you write an email to your supervisor expressing your concerns about the dataset. He agrees with your concerns, but he's also impressed with what you've learned and thinks your findings could be very important to the project. He asks you to change the business task. Now, the NDS campaign will be about educating dental offices on the challenges faced by senior citizens and finding ways to help them access quality dental care.

Changing the business task involves defining the new question or problem to be solved.

- (●) True
- ( ) False

✓ **Correct**
Feedback: Correct! A business task is the question or problem data analysis answers for a business.

19. **Scenario 2 continued** — **1 / 1 point**

You continue with your analysis. In the end, your findings support what you discovered during your online research: As people get older, they're less likely to attend follow-up dental visits.

But you're not done yet. You know that data should be combined with human insights in order to lead to true data-driven decision-making. So, your next step is to share this information with people who are familiar with the problem. They'll help verify the results of your data analysis.

The people who are familiar with a problem and help verify the results of data analysis are called subject-matter experts. Subject-matter experts also do which of the following? Select all that apply.

- [x] Offer insights into the business problem

✓ **Correct**
Correct! Subject-matter experts can offer insights into the business problem, identify inconsistencies in the analysis, and validate the choices being made.

- [x] Identify inconsistencies in the analysis

✓ **Correct**
Correct! Subject-matter experts can offer insights into the business problem, identify inconsistencies in the analysis, and validate the choices being made.

- [ ] Collect, transform, and organize data
- [x] Validate the choices being made

✓ **Correct**
Correct! Subject-matter experts can offer insights into the business problem, identify inconsistencies in the analysis, and validate the choices being made.

20. **Scenario 2 continued** — **1 / 1 point**

The subject-matter experts are impressed by your analysis. The team agrees to move to the next step: data visualization. You know it's important that stakeholders at NDS can quickly and easily understand that older people are less likely to attend important follow-up dental appointments. This will help them create an effective campaign for members.

It's time to create your presentation to stakeholders. It will include a data visualization that depicts the relationship between age and follow-up dental appointment attendance rates. Which type of chart will be most effective?

- ( ) A line chart
- ( ) A pie chart
- ( ) A table
- (●) A doughnut chart

✓ **Correct**
Correct! A doughnut chart is effective for demonstrating the relationship between two things, such as age and attendance rates.