1. **What is the combined total spend across the Evergreen and Valentine's Day Campaigns?**

-   **Variables of Interest in Facebook Data:** Media Spend (L), Campaign (D)
-   **Variables of Interest in Site Data:** N/A
-   **Method:** To get the combined total, sum Media Spend only for rows where Campaign = "Evergreen" or "Valentine's Day Gift Offer"
-   **Excel Method:** Use SUMIFS

    =SUMIFS('Facebook Data'!L:L, 'Facebook Data'!D:D, "Evergreen") + SUMIFS('Facebook Data'!L:L, 'Facebook Data'!D:D, "Valentine's Day Gift Offer")

    Answer: (c) 165616.41

2. **What is the Cost per video view and Cost per completion for the Free Shipping + Free Shipping CTA video creatives (please filter by video post type)**

-   **Variables of Interest in Facebook Data:** Media Spend (L), Video Views (R), Video Views to 95% (V), Post Type (I), Creative (H)
-   **Variables of Interest in Site Data:** N/A
-   **Method:** Filter for the post type (video) and creative (Free Shipping + Free Shipping CTA); Manually calculate Cost per video view = SUM(Media Spend) / SUM(Video Views) and Cost per completion = SUM(Media Spend) / SUM(Video Views to 95%)
-   **Excel Method:** Use filters for Post Type = "Video" and Creative = "Free Shipping + Free Shipping CTA"; populate a pivot table with values of Sum of Media Spend, Sum of Video Views, and Sum of Video Views to 95%; manually calculate the variables of interest (cost per video view, cost per completion)

Post Type	Video	
Creative	Free Shipping + Free Shipping CTA	

Sum of Media Spend	Sum of Video Views	Sum of Video Views to 95%
7961.27	136454	18022

Cost per video view = 7961.27 / 136454 = **0.058343984**
Cost per completion = 7961.27 / 18022 = **0.441752858**
Python also concludes (0.05834398405323405, 0.4417528576184663)

Even if considering a video to be completed with 95% or 100% and summing those two sums (18022 + 16276) and then dividing the the media spend by that sum will yield 0.232120532

Answer: None of the above but will select (b) $0.04 & $0.31 which is the closest to our values

3. Which creative category had the most efficient CPM?

- **Variables of Interest in Facebook Data:** CPM (X), Creative (H)
- **Variables of Interest in Site Data:** N/A
- **Method:** Sort the CPM values in ascending order (since the lower the CPM, the higher the efficiency) and identify the Creative category of the highest one
- **Excel Method:** Using filters, select the CPM column and click 'Ascending'

> The lowest CPM is $2.33
> The corresponding Creative for this observation is Brand Logo + Save Now CTA

> **Answer:** (a) Brand Logo + Save Now CTA
> - UNLESS AVERAGING ACROSS CREATIVE CATEGORIES -
> **Answer:** Brand Logo + Generic CTA; (CPM = 8.85)

4. Please join the Site data to the Facebook data. Which audience type generated a ROAS of 5.46?

- **Variables of Interest in Facebook Data:** Media Spend (L), Audience Type (G)
- **Variables of Interest in Site Data:** Total Revenue (C)
- **Method:** Create a new Total Revenue column in the Facebook Data sheet and pull the numbers from Site Data; then create a pivot table to calculate ROAS for each audience type
- **Excel Method:** First, create Total Revenue column by joining column C from the Site Data to the Facebook Data with this line:
  > =XLOOKUP(B3, 'Site Data'!$A:$A, 'Site Data'!$C:$C, 0)
  > Here, B3 is just an example, fill in this code down the whole dataset to complete the Total Revenue column. Now, create a pivot table with Audience Types for the rows and Sum of Media Spend and Sum of Total Revenue as the values. Now, create a calculated field called ROAS which computes the Sum of Total Revenue / Sum of Media Spend for each audience type. Now look for 5.46 and return the corresponding audience type.

Row Labels	Sum of Media Spend	Sum of Total Revenue	ROAS
Custom Audience	23677.9	86683	3.660924322
Facebook Interest	24833.8	39754	1.600802133
Lookalike	43794.21	120633	2.75454221
Website Custom Audience	96060.96	524129	5.456212388

Answer: (c) Website Custom Audience

5. **If CTR increased 150% on a given audience type but CPC remained the same, what happened to its CPM?**

- **Method:** CPM is the average cost for 1000 impressions. CTR is the percentage of times people saw your ad and performed a click. CPC is the average cost for each click. So, the percentage of times people saw an ad and performed a click increases and the cost per click remains the same → what happens to the average cost for 1000 impressions?
    - CPM = CPC * 1000 / CTR → If CPC stays constant and CTR increases, then CPM must increase as well; since 150% implies x2.5 → it increases by 2.5x or 150%

Answer: (c) Increased by 150%

6. **Our campaign recently doubled its attributed revenue on half of its typical purchase volume, while media spend remained the same in the same time period. What happened to ROAS and Average Order Value (AOV)?**

- **Method:** ROAS = Revenue / Spend → revenue doubles and spend stays the same → 2x ROAS; and AOV = Revenue / Purchases → revenue doubles and purchases cut in half → AOV = 2R/(P/2) → 4R/P → 4x AOV

Answer: (b) ROAS increased 2x, AOV increased 4x

7. Research the following: Custom Audiences, Website Custom Audiences, Lookalikes. Which of the following statements is true?

- *Custom Audiences* - A group of people Facebook already knows you have a relationship with; built off customer lists, app users/visitors, past purchasers, those who engage with your posts; great for retargeting people who already know your brand
- *Website Custom Audiences* - A type of custom audience but built specifically from pixel-based website activity; built off site visitors, tracks page activity and events (add to cart, purchase, etc.); good for highly intentional retargeting
- *Lookalikes* - A prospective audience based on people similar to an existing source audience; Facebook analyzes your source audience and finds new people with similar attributes, behaviors, interests, habits; great for acquiring new customers who behave like your most loyal ones

a. Website custom audiences and custom audiences will never include existing customers
    - False - They absolutely can and often do especially if you provide a customer list
b. The size of a lookalike audience is determined by the size of the "seed" audience
    - False - The size of the source does not determine the size, though it may impact details
c. Custom audiences can be composed of people who have engaged with your brand's Facebook page
    - True - Essentially in the definition
d. Lookalike audiences cannot be created from custom audiences
    - False - They are most commonly based on existing source audiences

 Answer: (c) Custom audiences can be composed of people who have engaged with your brand's Facebook page

8. Of all days media was live, which day had the lowest ROAS?

- **Variables of Interest in Facebook Data:** Date (C), ROAS (AB)
- **Variables of Interest in Site Data:** N/A
- **Method:** Filter to given four dates, sort ROAS and observe
- **Excel Method:** Manually filter to the provided dates on the answer key (February 23, 1, 5, 16); sort ROAS column in Ascending order and observe corresponding date

Answer: (c) February 5

9. **How much more media spend would be required to drive 70,000 total clicks (inclusive of clicks already generated) within the Valentine's Day Gift Offer campaign, assuming a $13 CPM and a 1.20% CTR going forward?**

- **Variables of Interest in Facebook Data:** CPM (X), CTR (Y), Campaign (D), Clicks (N)
- **Variables of Interest in Site Data:** N/A
- **Method:** Calculate the number of clicks we currently have and subtract from 70,000 to get additional clicks needed; convert clicks to impressions with CTR and then impressions to media spend with CPM
- **Excel Method:** Filter to only the Valentine's Day Gift Offer rows and sum the Clicks column,
  =SUMIFS('Facebook Data'!N:N, 'Facebook Data'!D:D, "Valentine's Day Gift Offer")

  → This returns 68,407 → 70,000 - 68407 = 1593 NeededClicks
  → Clicks = Impressions * CTR
  → ImpressionsNeeded = NeededClicks/CTR = 1593/0.012 = 132,750
  → SpendNeeded = (ImpressionsNeeded/1000) * CPM
  → SpendNeeded = (NeededClicks / 0.012) / 1000 * 13
        = NeededClicks * 13 / (1000 * 0.012) = 1593 * 13 / 12 = 1725.75

- **Answer:** (a) 1725.25

10. **How would you optimize the Evergreen campaign, and what data do you wish you had in order to make optimizations? Feel free to touch on creative attributes/performance, audience attributes/performance, and anything else you feel is relevant. Please keep your answer to 3-5 sentences.**

- **Answer:** To optimize the Evergreen campaign, I would reallocate spend toward the audiences and creatives that demonstrate the strongest efficiency (specifically those with the lowest CPM and CPC and the highest ROAS) and I would examine audience overlap and frequency trends. I would also add and test creative variables by including variations in messaging, format, and visual style. The data I'm missing, and would strongly benefit from, is detailed website pixel-based data (add-to-cart, checkout starts, favorites) so I can attribute performance dynamics to specific user behaviors rather than only top-line metrics. With that clarity, I could make more targeted adjustments that maximize the Evergreen campaign's return.