The test is divided into 3 parts, each designed to test your proficiency in the related skill. The data for each part is generated randomly and is not related to each other in any way. There may be some counter-intuitive data on row levels, i.e. data duplication, missing data, etc. You should not take them into account but rather focus on its structure and logic instead.

The data for you to work on is provided in this Google Drive folder and this database on Google BigQuery. They are separated into three parts correspondingly. Read the instructions carefully and use your skills to come up with the required result. You will also need to show the method in your submission. The more compact and efficient the method, the more score you will gain. You will be scored by your presentation as well. **Complete this test to your best effort in 1 hour.**

### A. **Google Sheets/Excel**
There are 2 tables. Table 1 contains data about advertising cost, segemented by dates, genders and countries. Table 2 contains data about advertising revenue, also segmented by dates, countries and genders. *Use Google Sheets and/or Excel, except their Pivot Tables function, to calculate*:

1. ROAS (Revenue/Cost) data for each segment *(a segment is a combination of all the identifying column in a table)* in Table 1.
2. ROAS (Revenue/Cost) data for each combination of country and date in Table 1

Present the data in Google Sheets and/or Excel files, containing the table with the final data and the functions used. *If you used any other method besides Google Sheets/Excel function, please write a short description of them in the files*.

### B. **SQL**
There are 2 tables. Table 1 contains data about advertising cost, segemented by dates, countries and networks. Table 2 contains data about advertising revenue, segmented by dates, countries, platforms and networks. Note that the network "Facebook Newsfeed" and "Instagram" is considered as only one network: "Facebook" and you must aggregate those two separate networks into "Facebook". *Write your SQLs in BigQuery to calculate*:

1. ROAS data for each segment in Table 1. Each segment must be unique.
2. ROAS data for each and every day there is in the calendar from 2021-09-28 to 2021-11-05, segmented by countries and networks in Table 1. Each segment must be unique. *There will be some dates where there is no data available. If so, that date's data must be calculated with the latest data available*.

Present your SQL in a ".txt" file.

### C. **Power BI**
The Power BI file contains a table with cost and revenue data segmented by campaign dates,

revenue dates, countries, platforms, networks and types. ***Use any Power BI functionality to:***

1. "Spread" the ROAS data horizontally by types, segmented by campaign dates, countries, platforms and networks. See image below for example.

Original table

| Campaign_date | Revenue_date | Country | Network | Platform | Type | Revenue | Cost |
|---|---|---|---|---|---|---|---|
| 2021-08-05 | 2021-11-03 | BE | GGA | Android | 90 | 2.11 | 12.60 |
| 2021-08-05 | 2021-11-03 | BE | Google Organic Search | Android | 90 | 0.84 | |
| 2021-08-05 | 2021-11-03 | BE | MTG | Android | 90 | 8.53 | 8.64 |
| 2021-08-05 | 2021-11-03 | BE | Organic | Android | 90 | 41.10 | |
| 2021-08-05 | 2021-11-03 | BE | Unity | Android | 90 | 0.73 | 3.36 |
| 2021-08-05 | 2021-11-03 | BF | FB | Android | 90 | 0.00 | |
| 2021-08-05 | 2021-11-03 | BF | Organic | Android | 90 | 0.16 | |
| 2021-08-05 | 2021-11-03 | BG | ALV | Android | 90 | 0.26 | 0.91 |
| 2021-08-05 | 2021-11-03 | BG | FB | Android | 90 | 1.22 | |
| 2021-08-05 | 2021-11-03 | BG | GGA | Android | 90 | 0.10 | 1.10 |
| 2021-08-05 | 2021-11-03 | BG | MTG | Android | 90 | 7.03 | 13.68 |
| 2021-08-05 | 2021-11-03 | BG | Organic | Android | 90 | 5.59 | |
| 2021-08-05 | 2021-11-03 | BG | Unity | Android | 90 | 0.01 | 0.06 |

Desired result table

| Campaign_date | Country | Network | Platform | Revenue | Cost | ROAS Type 0 | ROAS Type 1 | ROAS Type 2 | ROAS Type 3 | ROAS Type 4 | ROAS Type 5 | ROAS Type 6 | ROAS Type 7 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2021-08-01 | AE | Organic | Android | 90.53 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AE | Organic | iOS | 2.36 | | | | | | | | | |
| 2021-08-01 | AE | Unity | Android | 15.47 | 14.70 | 17.58% | 21.49% | 23.50% | 0.52 | 0.64 | 0.85 | 0.94 | 0.97 |
| 2021-08-01 | AF | ALV | Android | 0.82 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AF | FB | Android | 0.18 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AF | Organic | Android | 13.94 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AG | Organic | Android | 13.41 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AL | FB | Android | 39.97 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AL | GGA | Android | 0.46 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AL | Organic | Android | 9.42 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AM | Organic | Android | 2.41 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AO | Organic | Android | 1.29 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AQ | FB | Android | 20.24 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AR | ALV | Android | 170.62 | 319.34 | 12.61% | 19.01% | 22.10% | 0.25 | 0.27 | 0.29 | 0.31 | 0.34 |
| 2021-08-01 | AR | FB | Android | 349.14 | 700.70 | 23.93% | 33.12% | 35.84% | 0.38 | 0.40 | 0.41 | 0.42 | 0.44 |
| 2021-08-01 | AR | MTG | Android | 53.72 | 145.04 | 13.16% | 21.03% | 24.30% | 0.27 | 0.28 | 0.30 | 0.31 | 0.32 |
| 2021-08-01 | AR | Organic | Android | 382.26 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AR | TikTok | Android | 192.06 | 1,400.00 | 7.05% | 8.34% | 9.80% | 0.10 | 0.11 | 0.11 | 0.12 | 0.12 |
| 2021-08-01 | AR | Unity | Android | 0.30 | 3.92 | 1.35% | 1.42% | 5.67% | 0.06 | 0.06 | 0.06 | 0.06 | 0.10 |
| 2021-08-01 | AS | MTG | Android | 1.19 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AT | ALV | Android | 2,470.38 | 4,273.78 | 17.84% | 24.51% | 29.26% | 0.33 | 0.36 | 0.40 | 0.42 | 0.46 |
| 2021-08-01 | AT | FB | Android | 315.31 | 696.08 | 14.66% | 19.73% | 25.30% | 0.29 | 0.32 | 0.34 | 0.36 | 0.37 |
| 2021-08-01 | AT | GGA | Android | 71.50 | 312.16 | 12.15% | 15.72% | 17.72% | 0.19 | 0.20 | 0.22 | 0.23 | 0.24 |
| 2021-08-01 | AT | IS | Android | 2.48 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AT | MTG | Android | 196.68 | 223.44 | 26.20% | 33.56% | 38.87% | 0.42 | 0.45 | 0.48 | 0.50 | 0.52 |
| 2021-08-01 | AT | Organic | Android | 570.06 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AT | Unity | Android | 81.70 | 167.44 | 13.98% | 21.49% | 23.55% | 0.24 | 0.26 | 0.28 | 0.29 | 0.29 |
| 2021-08-01 | AU | ALV | Android | 4,119.41 | 8,375.36 | 14.86% | 20.19% | 23.66% | 0.26 | 0.29 | 0.32 | 0.34 | 0.36 |
| 2021-08-01 | AU | FB | Android | 3,111.97 | 6,273.40 | 20.20% | 25.07% | 29.49% | 0.32 | 0.35 | 0.39 | 0.41 | 0.43 |
| 2021-08-01 | AU | GGA | Android | 61.35 | 199.32 | 18.96% | 19.38% | 23.74% | 0.25 | 0.25 | 0.25 | 0.26 | 0.26 |
| 2021-08-01 | AU | Google Organic Search | Android | 1.57 | | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity | Infinity |
| 2021-08-01 | AU | IS | Android | 587.65 | 1,707.30 | 16.60% | 20.69% | 22.72% | 0.25 | 0.26 | 0.28 | 0.30 | 0.31 |

2. "Spread" the cost data horizontally by networks, and also include revenue type 0 data, segmented by campaign dates, countries and platforms. See image below for example.

Original table

| Campaign_date | Revenue_date | Country | Network | Platform | Type | Revenue | Cost |
|---|---|---|---|---|---|---|---|
| 2021-08-05 | 2021-11-03 | BE | GGA | Android | 90 | 2.11 | 12.60 |
| 2021-08-05 | 2021-11-03 | BE | Google Organic Search | Android | 90 | 0.84 | |
| 2021-08-05 | 2021-11-03 | BE | MTG | Android | 90 | 8.53 | 8.64 |
| 2021-08-05 | 2021-11-03 | BE | Organic | Android | 90 | 41.10 | |
| 2021-08-05 | 2021-11-03 | BE | Unity | Android | 90 | 0.73 | 3.36 |
| 2021-08-05 | 2021-11-03 | BF | FB | Android | 90 | 0.00 | |
| 2021-08-05 | 2021-11-03 | BF | Organic | Android | 90 | 0.16 | |
| 2021-08-05 | 2021-11-03 | BG | ALV | Android | 90 | 0.26 | 0.91 |
| 2021-08-05 | 2021-11-03 | BG | FB | Android | 90 | 1.22 | |
| 2021-08-05 | 2021-11-03 | BG | GGA | Android | 90 | 0.10 | 1.10 |
| 2021-08-05 | 2021-11-03 | BG | MTG | Android | 90 | 7.03 | 13.68 |
| 2021-08-05 | 2021-11-03 | BG | Organic | Android | 90 | 5.59 | |
| 2021-08-05 | 2021-11-03 | BG | Unity | Android | 90 | 0.01 | 0.06 |

Desired result table

| Campaign_date | Country | Platform | ALV | Unity | GGA | TikTok | Revenue Type 0 |
|---|---|---|---|---|---|---|---|
| 2021-08-01 | AM | Android | | | | | 0.10 |
| 2021-08-01 | AO | Android | | | | | 0.04 |
| 2021-08-01 | AQ | Android | | | | | 0.06 |
| 2021-08-01 | AR | Android | 319.34 | 3.92 | | 1,400.00 | 29.82 |
| 2021-08-01 | AS | Android | | | | | 0.06 |
| 2021-08-01 | AT | Android | 4,273.78 | 167.44 | 312.16 | | 80.71 |
| 2021-08-01 | AU | Android | 8,375.36 | 86.24 | 199.32 | | 243.80 |
| 2021-08-01 | AX | Android | | | | | 0.10 |
| 2021-08-01 | AZ | Android | | | 39.18 | | 1.19 |
| 2021-08-01 | BA | Android | | | | | 0.50 |
| 2021-08-01 | BB | Android | | | | | 0.19 |
| 2021-08-01 | BD | Android | | | | | 0.94 |
| 2021-08-01 | BE | Android | 289.80 | 47.04 | 157.22 | | 25.64 |

Present your result in a Power BI file with tables containg the required data. **The file must contain  proof of the methods that you used, i.e. the table contains DAX functions.**