**1) Identify 2 metrics for each stage of AARRR analytics frame work for below companies**

**Groupon**

1. Acquisition
   1. Traffic from different platforms (Google, Facebook, and web banner [banner ad])
   2. how customer visit Groupon? How they know about Groupon?
   3. how many people visit GROUPON through email subscription?
2. Activation
   1. From 1-a, how many people sign up as new customer & how many people sign in as existed customer
   2. how many people join membership (**Groupon SELECT** program (4.99/month))
3. Retention
   1. how long does customer stay in each item and in the website
   2. how many people continue Groupon Select membership
   3. how many active users and how many paying users and how many free users
4. Revenue
   1. how many items or events are in "my Wishlist" or “shopping cart”
   2. how many items or event continued to purchase from Wishlist or shopping carts
   3. what was the most purchased item of a day / week / month
5. Referral
   1. how many "invite friends" were sent
   2. how many "shares" to Messenger App and email

**Dropbox**

1. Acquisition
   1. How many download at PC / Mac or Android / IOS?
   2. How users know about the platform?
2. Activation
   1. how many sign-up users or sign-in users with Google/Apple account?
   2. how many users is using Basic plan for starters?
   3. how many users tried free trials for 30 days?
   4. how many users choose plans?
      1. Plus for individuals 9.99/month
      2. Family for households 16.99/month
      3. Professional + esign for professionals 24.99/ month
3. Retention
   1. how frequently users in free plan users are visit in platform, software, and App
      1. in plus plan users
      2. in family plan users
      3. in professional plan users
   2. how much of storage currently used in basic plan users (and Plus, Family, Professional?
4. Revenue
   1. users who choose the plan, Do they purchase plan with annual or monthly?
   2. how many people upgrade the plan?
   3. how many people down-grade the plan?
   4. how many users cancel the plan
5. Referral
   1. how many users share their DropBox folder to others
      1. how many people comes from the shares
   2. NPS Score - loyalty of users

**Question 2 The Founder of Dropbox wants to calculate the rate at which the paying customer grow monthly for last 5 months. How do you calculate the avg monthly growth rate?**

**Table

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3.64 Percent for Average Growth Rate

**Question 3 In this file, you will find the transactional data of around 100 customers in an auction e-commerce site like eBay. These customers were acquired at different points of time via different marketing channels. Each customer could bid and participate in some auctions and end up winning in a few.**

**Questions to answer:**

**Q 3.1 If you need to invest more in ONE of these channels for customer acquisition, what would be your choice, and why?**

If I have to invest one of these channels, I want to invest my money for Search - Paid. Here is the evidence.

Calendar

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Although number of visit, total GMV and participation auction is the lowest out of these four, the value of GMV per each participation is highest, and per winning. Also, compared to participation, Search - paid had higher percentile (66 percent) to win the auction compared to others.

For all I know, Search - paid are participate with confidence and spent the most money out of four channels.

I want to invest to less people spending a lot of money because I think it is comes from loyalty.

**Q 3.2 What % of bidders ended up winning in at least one auction?**

total was 102 bidders were existed and 27 bidder did not participate. Only 75 bidder participated.

48 bidders did not win the auction. the number of 48 bidders is contained the number of 27 bidders who did not even participate. only 21 bidders were participate the auction but did not win the auction. **54 bidders won the auction at least one.** "54/75 = 0.72" 72percent of bidders ended up winning the auction at least one auction.

**Q 3.3 If the Gross Margin of the business is 20%, how much the e-commerce should pay to acquire a customer (CAC) at the maximum to make break even?**

When does Total Gross Merchandise value is $65,665, only 20 percent of GMV is for Gross Margin which is $12,533. When e-commerce break-even point CAC must be equal to or lower than CLV (Customer lifetime Value) Therefore, gross merchandise value minus Gross Margin which is 53,132