Improve Grain.com
Product Sense Interview in Writing
Peter Kim

Introduction

The goal of this document is to demonstrate product management skills by pretending to be a Grain.com product manager who must “improve the product.” I wrote the original document as homework from a PM hiring team. It was essentially a written form of a “Product Sense” interview that asks the candidate to “improve product X.”

I spent 2 hours setting the product up, recording a meeting, and clicking through the product. I spent 5 hours writing the original document, far more time than a typical 30 minute interview. This allowed me to elaborate on parts that I typically don’t spend time on in a verbal interview. I manufactured qualitative and quantitative evidence to support my decisions. I marked out content as <NOT APPLICABLE FOR EXERCISE> or <TRUNCATED> if I thought that the section didn’t demonstrate key skills required for the target position or if expanding a section would only repeat the demonstration of skill already demonstrated.

I’m sharing this document because it consolidates the key components of a product manager’s work. For those who are less experienced in documenting strategies, OKRs, roadmaps and requirements documents, this document gives a flavor of how to articulate them. This document can serve as a helpful reference for those asked to complete similar homework.

I added “Commentary” that explains why I wrote the sections I did. Commentary works like the “director’s narration” on a DVD movie.

The document is organized in a “top down” fashion. It starts at the strategy level with elements such as the top level mission and northstar metric of Grain.com, then progresses to near term OKRs, and then to more layers of detail.

Table of Contents

Grain.com Top Level Mission, Use Cases, North Star Metric

All investments must align to the overall long term objectives of Grain.

Grain Product Mission - from Foundations to Apex

1. Foundations - Fully Capture/Playback/Highlight/Share/Store Meeting Content

1. Enable users to focus full attention on meeting conversation by unburdening users from the task of notetaking.
2. Enable users to manually search/select highlights and share recording, transcript, notes in part or whole with others and discuss.
3. Enable users to manually organize meeting recordings into library so that the desired recordings can be found and played back in future.

2. Value Add - Get Insights and Concretize Actions

1. Enable users to leverage information of their meetings to efficiently extract helpful AI generated insights such as summaries from meeting recording, transcript, and notes without having to delve into details.
2. Enable users to easily isolate key concerns of meeting attendees and formulate a plan of action to address them.
3. Enable users to leverage their teammate's meeting content as a source of knowledge that helps them form a plan of action.

3. Apex - Knowledge Base

1. Enable users to easily create knowledge base for future reference and easily find what knowledge they need.

2. Enable users to leverage not just information from meeting recordings but from the presentation materials and any artifact that was used for the meeting.

Grain Target Users, Usage Contexts, Success

Target Users	Usage Contexts	Success for Target Users
Sales Account Executives (SAE)	Sales (Multi-touch)	User efficiently closes deals. Company increases revenue.
UX Researchers, Product Managers, Product Teams	User and Product Research (Single-touch)	User efficiently identifies underlying needs of prospects and outcomes that prospects are pursuing. Users makes high ROI investments. Company achieves product-market-fit.
Customer Support	User and Product Research (Single-touch, Multi-touch)	Users convey information to Product Teams effectively so that Product Teams achieve success.
Interviewers	Hiring, Recruiting (Multi-touch)	Users make wise hiring decisions based on facts.
Project Team Leaders, Members	Any Team Meeting (Multi-touch)	Users drive progress toward team goals by having a reliable fact base of past discussions and decisions.

Single-touch versus multi-touch distinguishes interactions between internal company side and external people. Sales Account Executives (SAEs) in particular require multiple touches with prospects over a long period of time to close deals.

Grain North Star Metric

Increase the count of actions in the past 28 days taken by all users. Actions include:

1. Reading notes - scrolling through view
2. Recording meeting
3. Playing back recording
4. Search
5. Tagging
6. Clipping
7. Sharing
8. Commenting

Commentary

I wrote about the general long term approach of building out “Foundations,” “Value Add,” and “Apex” because it shows a framework that explains the long term trajectory of investments. This gives a sense of “where the product is going” in a compact and memorable form. Product managers must communicate a sense of “where the product is going” for an audience of supervisors, teammates, and direct reports. The structure is a simple way to get the audience to “get it” and “remember it” right away.

I wrote about the target users, usage context, and user success because it shows the reader how the same tool can be used to help different users achieve success. The compellingness of the value proposition of the product is different and lends one line of reasoning to pursue SAEs above all other alternative target users.

I decided on the Grain North Star Metric across all users to be the actions taken by all users. The underlying assumption is that people engage with a product more because they are deriving value from it. The greater the number of actions that users perform in the product, the greater the value they are deriving.

Another approach would have been to measure the success of all target users. However, because each target segment’s look of success is different, each target’s north star metric would have to be different. For SAEs, it would be the total number of deals closed with the usage of the tool for a fixed time period time. The count should go up in comparison to time periods when the tool was not available. For Interviewers, how can “good hires based on facts” be measured? The count of people hired and who continue working at the employer for 1 year? The north star metric is supposed to be a single summary measure no matter who the target user, so I decided that the count of actions is more sensible as a north star metric that applies to all target user segments.

Quarter's Objectives and Key Results - Serve Prime Target of Sales Account Executives (SAEs)

SAEs is our prime target user segment out of all the alternatives in the near term. Even though SAEs may only be the 2nd biggest population after Project Teams, SAEs are far more willing to pay for this product because they are under pressure to achieve quotas. SAEs need the tool urgently. The value proposition to Project Teams is less powerful in comparison because teams typically don't experience the same degree of urgency. All the other target users have a lower headcount and the product's value proposition is less compelling.

Category	**Objectives**	**Key Results**
Feature	Enable SAEs to earn more revenue/close more contracts with less effort.	Increase the total count of "significant" actions in trailing 28 days.
Growth	<NOT APPLICABLE FOR EXERCISE>	<NOT APPLICABLE FOR EXERCISE>
Better Engineering	<NOT APPLICABLE FOR EXERCISE>	<NOT APPLICABLE FOR EXERCISE>

Commentary

The categories of Feature, Growth, and Better Engineering refer to types of projects. Feature category projects involve solving a user problem more effectively or solving an unaddressed user problem. Growth category projects accelerate scaling. Example projects include driving more traffic to the product, or increasing the rate of completion of the onboarding flow. Lastly, Better Engineering category projects don't solve a user problem more effectively or solve an additional problem, but improves the user experience. Example projects involve reducing the error rate of a user action or reducing the latency of a query.

As mentioned earlier, I could have used "Increase the total count of contracts closed won in trailing 28 days." as Key Results, but decided not to for the reasons cited above.

SAEs' Problems

SAEs and Prospects' User Journey - How Effort is Expended

Sales Account Executives (SAEs) want to earn the most revenue with less effort.

SAEs achieve their success of closing deals (end point of user journey) by taking prospects through a sales funnel that includes steps such as qualification (starting point), assessment of needs/fit with solution, overcoming objections and negotiating a good deal.

SAEs typically must get buy-in from multiple stakeholders at the prospect company. This requires SAEs to understand each individual stakeholder as a person, develop relationships by building trust, and ensure that the stakeholders who make the buy decision feel reassured that they are making the right buy decision by addressing their concerns.

SAEs plan/execute their efforts not by mechanically executing lists of follow up actions from prior meetings, but by creating an action plan to get buy-in from people, the individual decision makers, by addressing both their emotional barriers as well as rational barriers.

Itemized Problems

1. **Understand Participant Sentiment**
   User Goal: SAEs want to know not only the words that were spoken and by whom, but the sentiments of the meeting participants throughout the meeting discussion so that they know who might be unhappy with which parts of the discussion. Knowing who are silently disagreeing and who need more relationship building helps SAEs allocate their effort wisely to close a deal.
   Impediment to Achieving User Goal: SAEs have a hard time tracking the sentiments of all participants because viewing multiple faces concurrently to assess silent emotional negative/positive responses to what was spoken and committing that to memory is very difficult. Writing notes down takes attention away from meeting.
2. **Understand Each Prospect Individually As Person**
   User Goal: After a sales meeting with multiple participants on the prospect side, SAE must formulate a plan to get buy-in from each one of the prospects' stakeholders. SAEs want to see the concerns of each participant by person.
   Impediment to Achieving User Goal: Currently, Grain.com does not show key discussion points by participant and this poses challenges for SAEs who want to plan next steps by person. Grain.com shows notes by categories such as "Customer Needs," "Competition," and others that are constructed by users by authoring prompts. However, this does not support SAEs' desire to view of individual prospects' concerns and sentiment.
3. **High Effort in Planning/Executing Future Meetings**
   User Goal: SAEs want to create and execute an effective action plan at future prospect meetings so that they can eventually close a deal with less effort.
   Impediment to Achieving User Goal: Currently SAEs have to rely on their own experience to create

what may be unique plans to get buy in from individual stakeholders. This can make planning and execution be high in effort.

Evidence of Existence of Problems

Itemized Problems	**Qualitative Evidence**	**Quantitative Evidence**
1. Understand Participant Sentiment	UX Research Quotes 1. "A lot of what I do to close a sale is driven by my understanding of the prospects' feelings and what worries them. They don't just come out and tell you." 2. "It's not what prospects say but what they don't say too that matters." 3. "Closing a deal requires more than a Vulcan-like rational argumentation. It's about people who are worried. It's about getting buy-in from who's not necessarily saying much." 4. "Knowing people's emotional responses to what's discussed helps me understand how to guide a deal."	Survey results of 100 SAEs (surveys can be qualitative too): 1. More than 70% strongly agreed with the statement that more than logic/rational arguments, trusting relationship with prospects' stakeholder is a bigger factor in closing deals. 2. More than 70% agreed that knowing who is unhappy about the product helps them concentrate on working on people who are blockers to a deal. 3. More than 70% said that they take notes about not just what is said but take notes on how people responded emotionally during meeting to what statements. 4. For SAEs, 95% of all calls have 100% of participants using video.
2. Understand Each Prospect Individually As Person	UX Research Quotes 1. "I create a plan by understanding what I need to do for each person who's a decision maker as part of deal." 2. "I think of what a prospect company's stakeholder wants and what his/her lens on the situation is. For each meeting, I have goals I want to achieve with each person."	Quantitative Data 1. For SAEs, the bottom 10 percentile for the number of attendees in their meetings was 4 from the prospect side.
3. High Effort in Planning/Executing Future Meetings	UX Research Quotes 1. "It's not just looking at notes from meetings past but figuring out what the next step should be that's time consuming." 2. "I feel like I'm reinventing the wheel sometimes because I know that some of my sales colleagues have run into the same type prospects with a similar set of worries. I wish I could learn what they did and based on their results, figure out what I should do."	Survey results of 100 SAEs: 1. The average "percentage of time" of sales work spent allocated to preparing for next meeting was "85%."

Prioritization of Problems (Not of Investments. Investments Are Solutions. Effort required to implement)

Itemized Problems	Headcount of SAE Affected	Depth of Pain Perceived from Problem	Summary Priority of Problems
Understand Participant Sentiment	High	High	High
Understand Each Prospect Individually As Person	High	Medium	Medium-High
High Effort in Planning/Executing Future Meetings	Medium (SAEs who have less experience in domain. Experienced SAEs report lower effort.)	High	Medium-High

The **Understand Participant Sentiment** problem is the highest priority problem by headcount and depth. Solving this problem is in the "**Foundations**" category where the raw ingredients of a meeting must be captured and be made accessible to users.

The remaining two problems are about the same degree of priority. Solving the problems of "**Understand Each Prospect Individually As Person**" and "**High Effort in Planning/Executing Future Meetings**" seems to require some synthesis and automated organization of information as well as searching for similarities of prospect concerns and prospect personalities. These features can be greatly enhanced with sentiment information, a foundational feature. These belong in the "**Value Add**" category of the long term product strategy.

Even though we have neither identified solutions nor costed them, just by looking at Grain.com's mission stack of **Foundations**, **Value Add**, and **Apex**, it seems that the **Foundational** problem of understanding sentiment should be addressed first because of the potential positive impact on **Value Add** solutions.

Commentary

I described the user journey of the SAE and the SAE's prospect to describe the context of the problems that SAEs must overcome to close a contract. Instead of listing problems immediately, the user journey description sets the context for the user problems.

The Itemized Problems section describes the goals that SAE's want to achieve under "User Goal" and describes the impediments or sub-problems that they encounter along the journey when trying to achieve their goal under "Impediments."

The Evidence section validates all the problems that have been identified. I manufactured the quotes from user research and quantities from surveys. The evidence hints at what type of information I would acquire as a

product manager to bolster my case of pursuing my selected user problems. If I got push back from others for pursuing this path, I would present the above evidence.

It is unwise to have a quantity such as “1.1M users have this problem for sure” because that would be fake. Listing evidence that seems “acquirable” in real life is good here because then the reader knows that you have experience with what evidence is feasible to acquire.

I prioritized the problems to apply the criteria of headcount and depth of the pain to assess the importance of the problems to solve.

If you’re asked to do the same type of homework assignment, maybe you should include some stuff you wouldn’t build and give a rationale of why you rejected them because the homework reviewer might want them.

I decided not to list a bunch of insubstantial (clicking is laborious so I want an app that understands verbal commands) or irrelevant (my kids bother me during video calls) problems because I understood the assignment to be more about justifying what should be built by showing the alignment from the strategy level all the way down to the feature level. The homework asked for a PRD which is documentation about what to build, why, and why now. It also asked for peripheral relevant information.

Solutions to SAE Problems

The investments are detailed below the “Return on Investments Summary” table. The effort and timeline estimations include effort across the whole stack - from front, back to integrations.

Return on Investments Summary

Itemized Problems	Return	Resources Required AKA Effort	Timeline
Understand Participant Sentiment	High	High	Long
Understand Each Prospect Individually As Person	High	Medium	Medium
High Effort in Planning/Executing Future Meetings	High	High	Long

All opportunities are worth addressing because the effort required or the associated risk are not overwhelmingly large for the potential return. I assumed here that I had no pre-existing set of opportunities that I had to compare my new opportunities against.

Some brief Google searches revealed that sentiment analyzers for facial expressions already exist. Therefore, Grain.com would not be building its own facial expression sentiment reader on its own from scratch; it would be selecting a vendor who would be supplying the technology. This is much lower risk and lower effort than building from scratch. If building from scratch was the only alternative, then it would be an argument against addressing the “Understand Participant Sentiment” problem. It’s risk and effort would be too high.

Typically, product managers assess **Return on Investments** for each investment to decide whether or not to pursue investments. What does the company get back for expending effort on these projects? Return typically refers to the incremental lift in North Star Metric which is “the total count of “significant” actions in trailing 28 days.” Some would argue that instead of low, medium, high, the return would have to be a specific quantity. Estimating specific quantity lifts can be hard depending on the feature; however, it can be done in some cases in real life. I don’t have the data here to perform credible estimations so I chose to use the low, medium, high system.

Below are the details of the investments AKA “what we will build” from the users perspective.

1. Solution to Understand Participant Sentiment

User Stories include:

1. **[Solution Release v1]**: As SAE, I want to see positive and negative sentiments for each participant for the duration of the meeting so that I can witness what I missed during the meeting.
    a. **Features** include:

i. In the “Transcript” Tab of the “Meeting Details” page, display vertical lanes with each lane with participant’s avatar as a column label. In each lane, display positive or negative sentiments as a vertical line for the span of transcript that the sentiment was shown by the participant. Neutral sentiment is blank.
An alternative to positive/negative/neutral sentiments would be more granular sentiments such as anger, sadness, disgust… but I declined to pursue this approach because it provides exceedling granular emotions that the user might not find useful. The precision of the emotional readings of the meeting attendees may overwhelm the SAE with information.
ii. Mouse hover over any positive or negative sentiment vertical bar, the right hand side of the video shows the “group view” of the video conference call with the target participant in view and NOT the solo video of the person talking.
iii. Mouse hover over column label displays full name.
The “design” of the features for the most part mirrors the current design of the app. Features added to the existing app must be retrofitted into the existing infrastructure. That is, this feature adds a new foundational component to the app and it must behave in parallel with already existing components to fulfill user expectations of what he/she can do with the new element.

2. As SAE, I want to filter all positive or all negative spans of sentiment and see what was being discussed so that I can quickly isolate what people are reacting positively to and negatively to. This will help me save time.
    a. **Features** include:
        i. **[Solution Release v1]**: Beneath each avatar at the top of each vertical sentiment lane, there is a switch that toggles through positive, negative, none. Activating positive isolates positive sentiment filter for that participant. Only one participant can have filter active at one time. The Transcription corresponding to that time span is shown.
3. As SAE, I want to highlight and share the sentiment so that I can discuss it with teammates.
    a. **Features** include:
        i. **[Solution Release v2]:** On hover over sentiment vertical bar, shows span “selector”. First click marks beginning of high span and second click marks end. Tool shows “Comment” and “Clip” action items. Clip from video of group view of video call participants and NOT the solo video of person talking. “Comment” allows commenting just like current commenting.
4. As SAE, I want to see the points in the discussion that have the greatest unified positive or negative sentiments in the participants so that I can quickly identify what has broad positive consensus and what has broad negative reactions.
    a. **Features** include:
        i. **[Solution Release v3]**: In the “Timeline” section below the video screen, add horizontal sentiment bar in parallel with the existing “Speaking Time” timeline. Clicking on timeline updates rest of page such as “Transcript” section just like it does now.

2. Solution to Understand Each Prospect Individually As Person

Make each participant the top level category. Make “Questions”, “Concerns”, “Objections”, “Sentiments” and other like categories be the second level category of notes.

User Stories include:

1. **[Solution Release v1]**: As SAE, I want to see each stakeholder's questions, concerns, objections, sentiments at one person at a time for one meeting so that I can see everything about one participant at one time.
    a. **Features** include:
        i. On "Meeting Details" page, add a "About Participants" tab as a second tab next to "Notes."
        ii. In "About Participants" tab, have sub-tabs for each participant with their names. In each participants sub-tab, have sections of "Questions," "Concerns", "Objections", "Sentiment" and others. These sections take up vertical space and must be scrolled through from top to bottom. This is automated using the same technologies as "Notes," generative AI.
        iii. The "Sentiment" section shall have sub-sections of "Positive", "Negative." A transcript of what was being spoken in the meeting before and during the sentiment response shall be shown.
        iv. For each transcript snippet in "Positive" and "Negative" sub-sections, clicking on it will show the video of the person's face and run the audio of the meeting.
2. **[Solution Release v2]**: As SAE, I want to see all participants' Person-Centric summaries of the types of questions, concerns, objections, things he had positive sentiment for and negative sentiment for all meetings in playlist so that I can see how the participant's role as proponent or opponent of the sale evolved over multiple meetings over time.
    a. **Features** include:
        i. On "Playlist Details" page, add "Participant Summary" section above Meeting List grid. …. <TRUNCATED>

3. Solution to High Effort in Planning/Executing Future Meetings

<TRUNCATED>

Commentary

The word, "feature" means different things to different people. The "features" I define here are more detailed than a typical product manager would have to describe to his team. In a product pod team that included product designers, I would describe user stories and the designer would take over from there. The designer would have already witnessed the user research that identified the user problems so the designer would not be surprised by any of the user stories.

I used the Return on Investment criteria to assert that all ideas were worth pursuing above. But there are alternative criteria such as "Reach, Impact, Confidence, Effort."

Demonstrating that I could write user stories and describe specific features would reassure homework reviewers that I can, in fact, write out rationale for investments. I described features to demonstrate that I can specify UI mechanisms/interactions to concretize a user story into something real that engineers can build.

I added Release numbers because it demonstrates that I can group features together into sensible chunks that end users would appreciate together.

Sequencing for Implementation and Launch - Accounting for Engineering Effort

Sequencing accounts for engineering resource constraints and the effort that is required by the features.

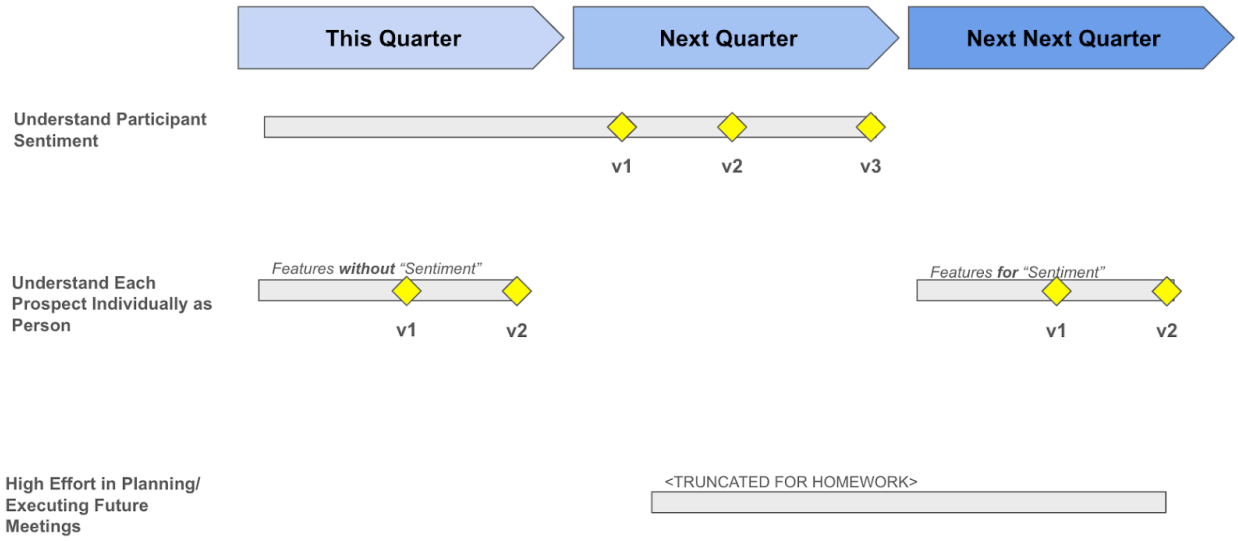
Adding “Understand Participant Sentiment” is laborious because additional infrastructure to hold extra group view video must be stored and be recallable. Furthermore, some integrations with existing “sentiment reading” technologies appear complicated. Shopping for the best face reading technology vendor and integrating their solution to our infrastructure will take long time and high amount of resources.

“Understand Each Prospect” can move forward without the “Understand Participant Sentiment” solution. The features described above can be launched without the “Sentiment” features first. Once the “Sentiment” feature foundation has been laid, then the incremental Sentiment features for “Understand Each Prospect” solution can be launched.

“High Effort in Planning” has been TRUNCATED.

Return on Investments Summary

Itemized Problems	**Return**	**Resources Required AKA Effort**	**Timeline**
Understand Participant Sentiment	High	High	Long
Understand Each Prospect Individually As Person	High	Medium	Medium
High Effort in Planning/Executing Future Meetings	High	High	Long



Commentary

I wanted to demonstrate my experience as a PM in this section with a not-so-toylike timeline. Most 0 to 1 projects don't result in a simple laundry list of features that the team releases one at a time in the order of ROI. Completion timelines can be messy and this section demonstrates that I have experienced such cases.

Success Metrics

First, we must determine whether our investment achieves product market fit. This means measuring whether users who have the choice of using the feature try the feature and whether users who have tried it come back and use it again.

Second, if we have achieved product market fit, then we have to perform some experimentation in terms of what the right monetization approach is. Should this feature be part of free because it increases conversion to "Starter" "Business" "Enterprise" accounts? Should this feature only be offers in Business? What maximizes revenue that is consistent with Grain.com's monetization strategy.

Experimentation for Product Market Fit Validation

For "Understand Participant Sentiment," V1 launch we want to AB test:

1. Paying Plan Users - Hypothesis: "Enabling users to see and search positive/negative sentiment of their meeting will increase user engagement with our tool."
    a. Paid Plan User Control A: Do not show them the solution
    b. Paid Plan User Experimental B: Show them the solution
    c. Metric that Determines Winner:
        i. Total number of significant action in the last 7 days
    d. Guardrail Metric
        i. Retention of Subscriber.
    e. Product Market Fit Metrics
        i. Adoption of Sentiment Features
            1. Percentage of users with at least 1 meeting recording with 4+ participants who see the "Sentiments" feature click into it.
            2. Percentage of users with at least 1 meeting recording with 4+ participants who search/filter by sentiment at least 1 separate times.
            3. Percentage of users with the same conditions as above commenting/clipping at least 1 times.
        ii. Retention of Sentiment Features
            1. Of all users who adopted the feature, the percentage of adopters who use the sentiment features (search, filter) again in the following 14 days.
            2. Of all users who adopted the feature, the percentage of adopters who use the sentiment features (comment, clip) again in the following 14 days.

Experimentation for Monetization

For "Understand Participant Sentiment," V1 launch we want to AB test:

1. Free Plan Users - Hypothesis: "More Free Plan Users will convert to priced accounts of "Starter," "Business," and "Enterprise" with access to the Sentiment solution v1.
    a. 1st time Free Plan User Control A: Do not show them the solution
    b. 1st time Free Plan User Experimental B: Show them the solution
    c. Metric that Determines Winner:

        i. Conversion rate from Free User to Paying User in the first 8 weeks of first meeting recorded.
    d. Guardrail Metric:
        i. Retention of Subscriber. We have to make sure that people aren't signing up earlier and at higher rate to only cancel early because the feature does not meet expectations.

<TRUNCATED>

Commentary

I used some basic metrics product management skills to structure AB tests. Demonstrating that I've done AB tests before by explaining what metrics I would use to determine the winner and what other metrics I would monitor can convince the homework reviewer that I'm not new to testing the results of anything I build.