# Experiment 1: Seeking Demand Curve

## 1. Experiment Background

This experiment simulates a perfectly competitive market, aiming to help us understand the formation of demand and supply curves. In this experiment, the traded good is backpacks, with the teacher playing the role of the supplier and the students participating as demanders in the auction. By participating in the auction process and making bids, we will further understand the behavioral characteristics of both the demand side and the supply side in the market. Through this hands-on activity, we not only experience the real process of market transactions but also deepen our understanding of the demand and supply curves in economics. The goal of this experiment is to familiarize us with the market auction mechanism, learn how to record and organize experimental data, and extract valuable market information. We will also be able to draw demand curves based on the experimental data. Additionally, we will calculate the optimal transaction price to help the supplier maximize profits. Here is the translation of the "Experimental content and steps" section into English, with the product changed to "backpacks":

## 2. Experimental Content and Steps

### Experimental Content

This experiment simulates the auction process of a perfectly competitive market to help students understand the formation of demand and supply curves. The teacher acts as the supplier, while the students participate as demanders in the auction. By participating in the auction process and making bids, students will observe and understand how price changes affect demand in the market, and subsequently help us draw the demand curve. The main objective of the experiment is to identify a price level that maximizes the supplier's (teacher's) profit through the auction. Additionally, students will learn how to record and organize experimental data, calculate the optimal price, and understand how to draw the demand curve.

### Experiment Steps

Step 1: Display the Trading Items

The teacher displays the auction items, which in this experiment are specific backpacks. The teacher explains that the price of these backpacks is nominal and not the real market price. Students do not need to pay any costs during the auction process. The teacher ensures that students understand this is a simulated transaction.

Step 2: Explain the Experimental Principle and Rules

The teacher explains the basic principles and rules of the experiment. The teacher will clarify that through the auction process, students will reflect the market demand through their bids. The teacher will also emphasize that students must not collude when submitting bids to ensure that each bid is independent.

Step 3: Bidding

The teacher informs the students that they, as market demanders, can bid based on their true willingness to purchase the backpack. Students are instructed to fill out the bid forms according to their personal preferences. The bids must be within a reasonable range, typically not exceeding

500 yuan and not less than 0 yuan.

Step 4: Fill Out the Bidding Form

Students fill out the auction bidding form based on their preferences for the backpack. The form can be paper-based or online. Once completed, all bids must be sealed and handed over to the teacher or uploaded online.

Step 5: Collect and Compile Bids

The teacher invites student representatives who participated in the experiment to compile the bidding list, check the bids, and publicly tally all bids. At this point, the teacher ensures that the data is accurate and that all bids are recorded correctly.

Step 6: Process the Bid Data

After the student representatives tally the bids, the teacher enters each bid into a table that processes the data in real time, ensuring transparency. During this process, if any extreme bid (such as 0 yuan or over 500 yuan) is found, it will be considered an invalid bid and excluded from the experiment.

Step 7: Generate the Demand Curve

Once all bids have been tallied, the teacher organizes the data into transaction information and generates the demand curve. This curve, showing how demand varies with price, is then publicly displayed to the students.

Step 8: Explain the Demand Curve

The teacher explains to the students how the experimental data was organized into auction transaction information and how the demand curve was generated. The teacher will emphasize the significance of the demand curve, helping students understand the relationship between price and demand.

Step 9: Calculate the Maximum Profit for the Supplier

Based on the transaction prices obtained from the auction, the teacher will calculate the maximum profit that the supplier (teacher) can achieve. The maximum profit is determined by finding the price level that results in the highest profit, which is the price multiplied by the number of backpacks sold at that price. The teacher will explain the economic significance of the price that maximizes profit.

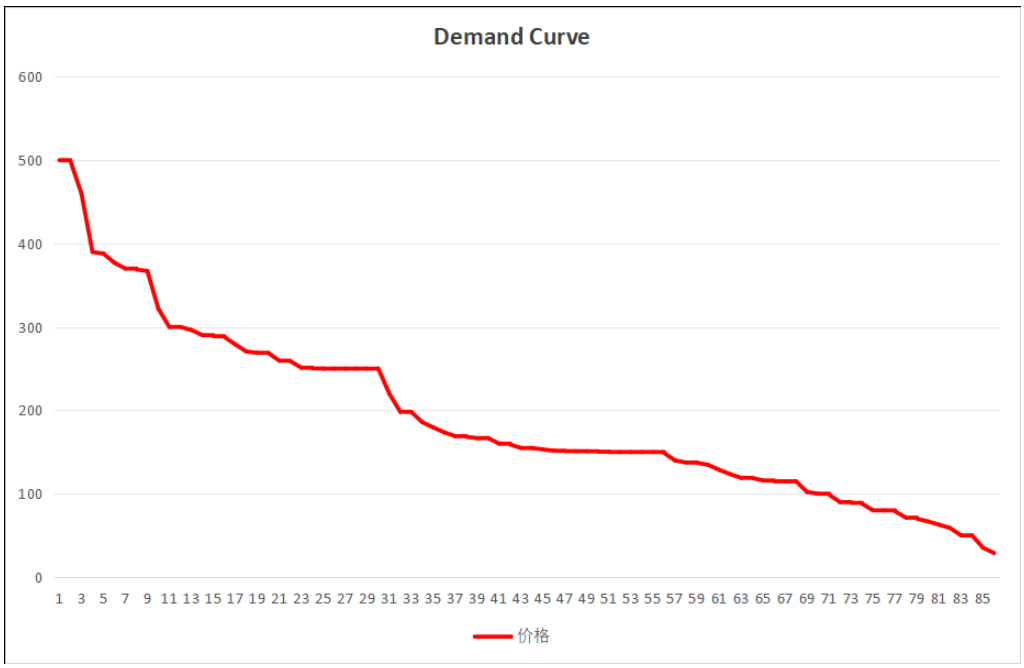
Step 10: Recognize the Student with the Best Bid

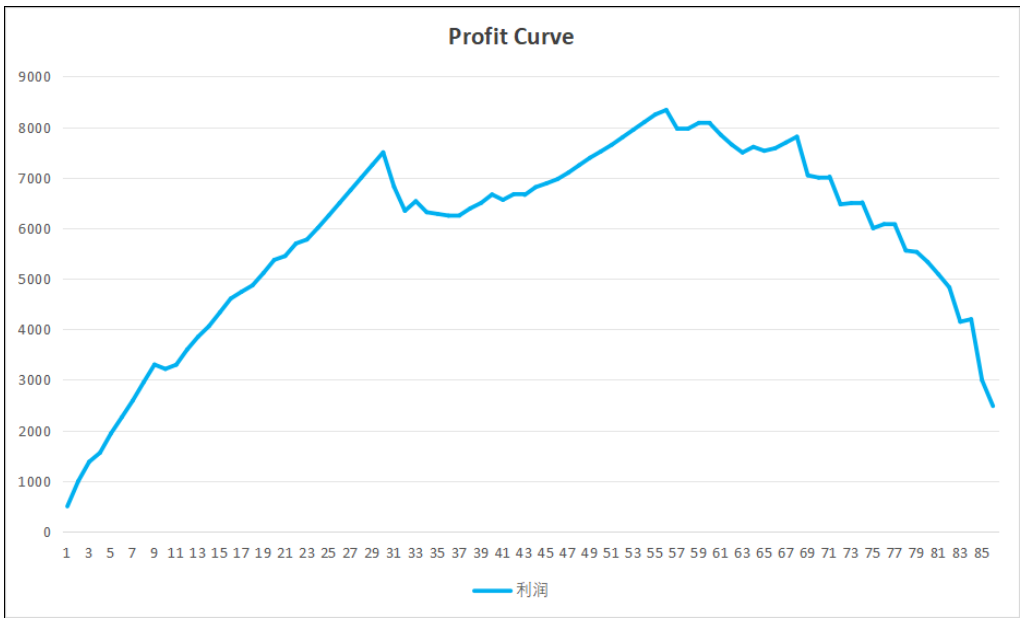
The teacher identifies and commends the student who submitted the most appropriate bid. Additionally, the teacher encourages students to discuss how changes in transaction prices could affect the demand curve. This discussion helps deepen their understanding of the impact of price fluctuations on demand.

Step 11 (Extension): Find the Intersection of the Supply and Demand Curves

In this extended part of the experiment, the teacher helps students analyze and find the intersection point between the supply and demand curves. The price corresponding to this intersection point represents the market equilibrium price, which is the price at which supply and demand are balanced.

# 3. Experimental Results




The curve initially rises sharply as the price decreases, indicating that the supplier can sell more products at a lower price, thus increasing total profit. The profit peaks at 8,337.28 ¥ at the price level of approximately 148.88 ¥ . After this point, even though demand continues to increase, the profit begins to decline because the selling price is too low to maintain a high profit margin. This illustrates the optimal price point for maximizing profit.

My bid price is 200 ¥

# 4. Experimental Experience

Through this experiment exploring the demand and profit curves, I gained a deeper understanding of the relationship between price and demand, as well as how to achieve profit maximization through proper pricing. The experiment simulated a perfectly competitive market, and as a demander, I participated in the auction and bidding process. Not only did I experience the real process of market transactions, but I also gained a clearer understanding of the practical meaning

of the demand curve.

During the experiment, I first observed that as the price decreased, the demand rapidly increased, which aligns with the economic principles I had previously learned. This part helped me intuitively understand the downward slope of the demand curve, indicating that as the price falls, consumers' willingness to buy increases.

Furthermore, by analyzing the profit curve, I realized that while a lower price can lead to higher demand, if the price is too low, the profit per unit decreases significantly, ultimately causing overall profit to decline. Through calculation and observation, I determined that the optimal price point for maximizing profit is around 148.88 yuan, where the supplier's profit is maximized. This helped me better understand that in the market, finding the right price level not only increases sales but also ensures profit maximization.

Overall, this experiment not only enhanced my understanding of economic theory but also made me realize the connection between theory and practical application, especially in terms of market pricing, profit analysis, and decision-making. It also helped me develop my ability to analyze market dynamics and optimize decisions, which will have a positive impact on future work involving pricing and market analysis.