

**Problem 1. Kentucky Kingdom – Pricing Strategy**

**General amusement park market research:**

To create a price discrimination pricing strategy, let's analyze the amusement park market and customer base:

1. The Amusement Park market consists of rides (roller coasters), Parking charges, Merchandize, Food Items, and some services like Photography & Locker facility.
2. The customer base can be classified as international, in-state and out-of-state customers as well as children and adults. There can be low-wage customers as well as high-earning customers.
3. There are a limited number of rides with limited capacity. Some rides would be more popular than others. Some rides may be more popular with children, while others may be more popular with adults.
4. More crowds are expected during weekends and holidays because schools and offices are often closed. On weekdays, more tourists, senior crowds, and school trips are expected.
5. There would be customers who would be visiting one-time (mostly out-of-state and foreign tourists, and semi-local school trips) and some would be more enthusiastic about amusement parks (frequent visitors, mostly local).
6. Winter is usually an off-season for amusement parks in the Midwest area.

**Current pricing strategy of Kentucky Kingdom:**

1. Kentucky Kingdom currently charges \$44.95 for one-day pass general admission.
2. Children under 48 inches tall, seniors and military will get \$10 off the price - \$34.95.
3. Parking is controlled by the Expo Center and will cost \$8 per car.
4. Right now, season passes are just \$59.95, which give customers unlimited access to parks during a season. They are good during the Kentucky State Fair and include 20 percent discounts on food and merchandise.

**Current pricing strategy in similar markets in other geographical areas:**

1. King's Island can be considered a close match to Kentucky Kingdom but in a different geographical location.
2. King's Island has a two-part pricing strategy. They charge an entry fee to all the customers, which gives them access to all the rides and attractions. They charge the customers a surplus for food items and merchandize and their services like photography and locker service for which there are no alternatives inside the park. The customers are not allowed to bring outside food and drinks. They also want the customers to spend as much time inside the park as possible because this would make the customers buy more for food and drinks. The children would want to buy more merchandize.
3. King's island sells the below entry passes:

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- One-day pass at \$42 per customer.
  - Two-day pass as \$72 per customer (any two days during a season)
  - daily parking for \$20
  - Seasonal pass for unlimited entries in a season (Gold Pass: New, \$120/person and Renewal, \$108 person; Platinum Pass: New, \$202.00/person and Renewal, \$195/person)
  - Fast-lane pass for about \$529 for the season
4. The tickets are discounted if purchased online (hence enabling pre-sale of tickets to all customers). This will also reduce long queues at the ticket window at the park and hence reduces the labor requirements.
  5. For off-season (winter) they have lower prices for everything.
  6. For seasonal passes (which are expensive), they have payment plans with about 20% upfront payment the remaining amount to be paid in installments. This enables the low-wage customers to pay high amount passes in installments and hence boosts sale.
  7. Since their general admission customers have access to all the rides, there are usually long queues for each ride. They spend a lot of time in the park because they want to do as much rides they want to. The longer time they spend in the park, the more they spend on food and drinks. Since no outside food or drinks are allowed, the price of these items is usually set higher than normal to generate revenues in a self-created monopoly on food in the park.
  8. Price discrimination to different customers for the same good - They charge premium (fast lane pass) amount to customers who are willing to pay more to have access to more rides in a day. The fast lane pass customers can spend more to do more rides. This gives more revenue to the park in a short amount of time from customers who can pay more to save time and do more activities inside the park.
  9. Different prices to the same customer for successive units of the good - One day passes are about \$42 per customer but two-day passes cost lesser (\$72). Not all customers would actually use the two-day pass. Hence that is an additional revenue for the park.

### **Comparison of pricing strategy and suggestions for Kentucky Kingdom: -**

Note: the goal of our suggestions is to use first, second, and third-degree price discrimination to segment customers based on their position on the demand curve (and willingness to pay based on individual price elasticity of demand) to extract the maximum surplus from customers.

1. Given season passes are a type of quantity discount that is a second-degree price discrimination strategy, our first suggestion is a type of third-degree price discrimination that distinguishes among types of customers purchasing the season pass. Currently Kentucky Kingdom (KK) does not distinguish its customers based on their paying ability

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as done by King's Island. Hence KK can create payment plans for season pass buyers. The payment plan can ask for an upfront payment of 20% of total price with the remaining amount being paid in installments. This would increase the sales of season passes because more customers would be able to afford it. It is worth noting that KK's season pass is already much less expensive at \$59.95 compared to King's Island at season pass already which is about \$100-\$200. Allowing customers to create a payment plan for KK's season pass would result in only a few dollars per month. This could attract many customers since it would be only a few dollars per month. This would also allow KK to reach a whole new market segments of low-income customers not being reached in the market.

2. Another strategy for KK could be to keep their special attractions (or rides) out of the entry pass, and hence charge customers an additional amount for each ride specifically for those special rides or attractions. This helps extract more surplus out of the customer.
3. Improving upon the last suggestion, we suggested using "cover-charge" type model to yield even more surplus extraction. Instead of charging a flat fee for unlimited rides or even a small charge for every ride, KK could combine a flat charge for admission and a per ride fee to extract a maximum amount of surplus per customer. For example, KK could charge \$25 for admission, and then \$5 per ride. Some customers may ride 10 rides resulting in total revenue of \$75 for that customer, some customers may ride 5 rides resulting in total revenue of \$50 per customer, and some customers may ride zero rides at a TR of \$25 for that customer. The theory is that each customer will fall at a different point on the demand curve - some will be willing to ride and spend more while some will be willing to ride and spend less. This pricing scheme allows KK to extract more surplus than if a flat fee or fee per ride scheme was adopted. This is first-degree price discrimination since all surplus is extracted as KK walks revenues down the demand curve charging each customer the maximum, they are willing to pay. More customers will be attracted at the lower price and less price sensitive customers will send more money.
4. KK can also create fast pass for its premium customers who are willing to pay more to have access to more rides in a day. This is another way to extract surplus price less price sensitive customers who are willing and able to pay for a premium product. This is third-degree price discrimination that is similar to airlines offering first class and coach seats in flights. the inverse elasticity pricing will help in this pricing strategy.
5. Currently KK shuts down in the off-season, but King's Island remains open most days. The King's Island tries to attract customers by creating winter-themed attractions in the park (like Winterfest in winter, and The Great Pumpkin fest in the fall season when sales are lower than peak season of summer). The ticket prices are about 40% lower for the off-season. Hence if KK can create fall season or winter holiday theme attractions, it may

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attract more crowd in the off-season with lower prices. This may make up for their variable costs in the off-season of staying open and contribute toward their fixed costs and, as a result, minimize losses by staying open instead of shutting down in the off season (a proper analysis and more information is required for this determination).

6. King's island tried to boost their online sales by giving discounted prices for all the sales done online. Currently KK does not have such offers.
7. During weekends (when schools and offices are off), the ticket price can be increased because a larger crowd is expected to visit the park on weekends.
8. Further, quantity discounts can be used (second degree price discrimination) to attract large school field trips and corporate "team-building" during off-peak times such as workdays.

*excellent answer!*

2. The state of Kentucky decides to develop a state park in a fairly remote location in eastern Kentucky, high in the mountains along a river that cuts a deep canyon and has abundant trails and overlooks. They anticipate that lots of outsiders (tourists) will want to visit the park, and some of them may even want to stay overnight. They decide that, rather than the state government owning and operating a hotel/lodge, they will outsource this part of the resort to a private-sector owner-operator. You see an opportunity here, and decide to study demand and costs to determine whether this would be economically profitable. Here is what you discover. Demand is seasonal, with six months on-season and six months off-season. On-season demand is given by  $Q = 20 - P$ , where  $Q$  is the number of rooms demanded per night and  $P$  is the price of a room in dollars. Off-season demand is given by  $Q = 10 - P$ . [Note: the year is 1954, and a dollar would purchase much more in 1954 than in 2019.] Average variable costs, average total costs, and marginal costs are as illustrated in the attached diagram. Now for the question.
- (10 pts.) What price and quantity (number of rooms rented per night) will maximize profits or minimize losses in the off-season? In the on-season? What will daily profits or losses be in each period? Explain how you arrive at your answers, and carefully illustrate in the diagram.
  - (5 pts.) Is this an economically viable proposition? If the state decides to auction off the rights to operate this monopoly hotel/lodge to the highest bidder, explain briefly how you would formulate your bid.

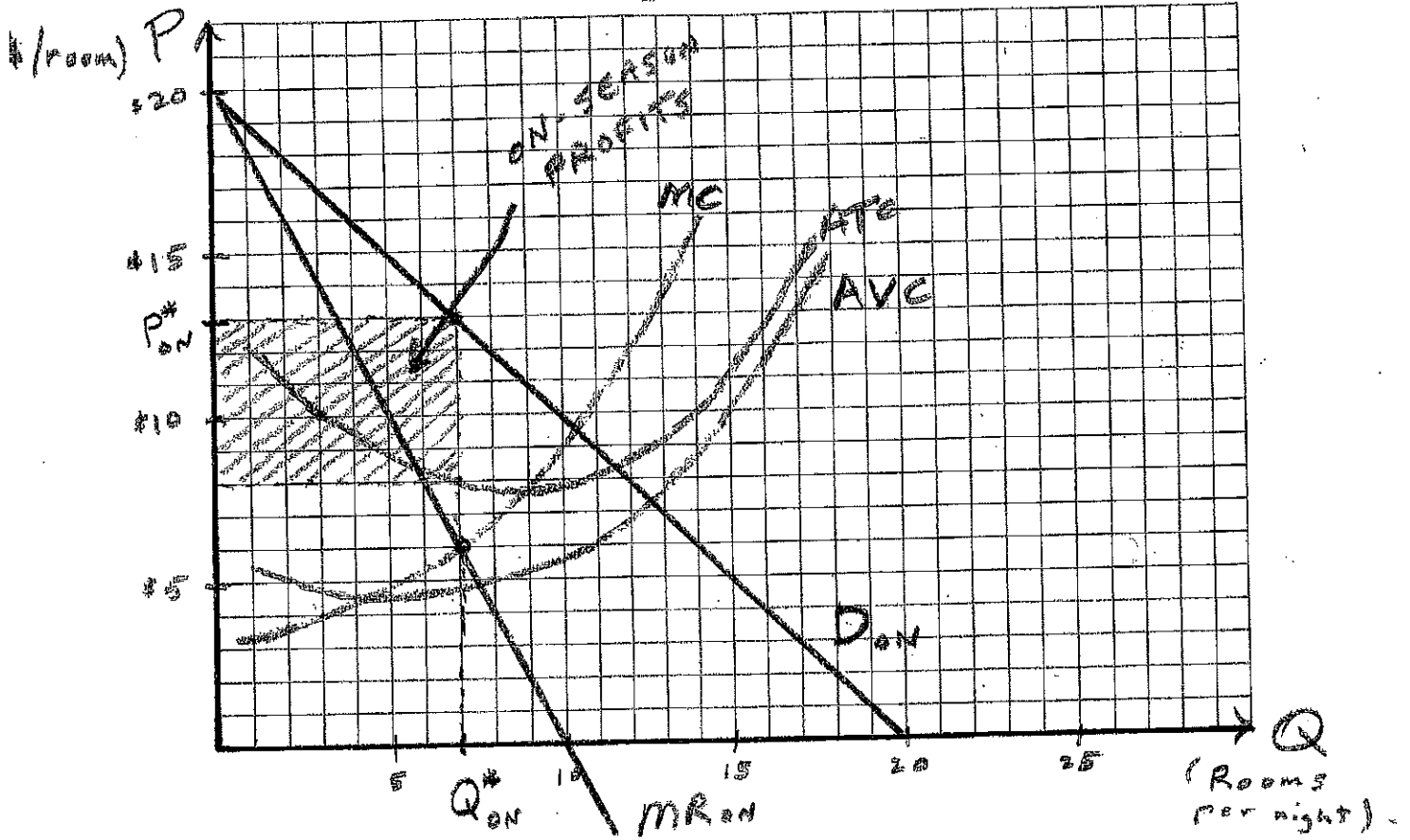
(a) On-season demand and off-season demand are illustrated in the attached diagram. The associated marginal revenue curves are also illustrated. The optimal on-season output occurs at the intersection of the firm's marginal cost curve and the on-season marginal revenue curve ( $MR = MC$ ). The profit-maximizing price is determined by going up to the on-season demand curve at that output.  $Q^* = 7$  and  $P^* = \$13$ . At that output, average total cost (ATC) equals \$8, so profit per unit is \$5. Total on-season profit equals  $\$5 \times 7$ , or \$35.

The optimal off-season output occurs at the intersection of the firm's marginal cost curve and the off-season marginal revenue curve ( $MR = MC$ ). The profit-maximizing price is determined by going up to the off-season demand curve at that output.  $Q^* = 3$  and  $P^* = \$7$ . At that output, average total cost (ATC) equals \$10, so loss per unit is \$3. Total off-season losses equals  $\$3 \times 3$ , or \$9. Note that price exceeds average variable cost, so the firm is better off producing a positive rate of output than shutting down in the short run.

(b) Yes. On-season profits more than compensate for off-season losses. Half of the year the firm earns \$35 profit, and the other half it suffers \$9 losses. Average daily profits of \$26 times 182.5 days per season equals \$4,745 economic profit per year. The market value of being the monopoly provider of overnight lodging in this market is the present discounted value of this future stream of profits, for whatever length of time you negotiate a lease. If you bid and secure the rights to this monopoly, you are ahead of the game.

Diagram for Question # 2:

### ON SEASON



### OFF SEASON

