

# Midterm Example

ECONS 321 - Sports Economics

March 5, 2018

## Multiple Choice

1. If the cross price of elasticities of two products (with respect to each other) are both positive, then those two products are \_\_\_\_\_ of each other.
  - a) complements
  - b) substitutes
2. Let the Pullman Lions be the team in the strong market, and the Kennewick Panthers be the team in the weak market. Suppose that the Pullman Lions are playing at home, and that there is a 80-20 revenue split. Now suppose that the Pullman Lions get a raw revenue of \$160 million and incur a payroll cost of \$110 million, whereas the Kennewick Panthers get a raw revenue of \$60 million and also incur a cost of \$70 million. What is the **profit** earned by the Pullman Lions due to this revenue sharing?.
  - a) \$26 million
  - b) \$35 million
  - c) \$50 million
  - d) \$17 million
3. Suppose that there is a two-team league, and that free agency is complete and unfettered. If  $MR_1 > MR_2$  then:
  - a) team 2 won't sell any players as  $MR_1 > MR_2$  thus no trade will take place
  - b) team 1 won't sell any players as  $MR_1 > MR_2$  thus no trade will take place
  - c) team 2 will hire better players from team 1 until  $MR_1 = MR_2$
  - d) team 1 will hire better players from team 2 until  $MR_1 = MR_2$
4. If a sports league is deemed to be a \_\_\_\_\_, then agreements among its members cannot violate Section 1 of the Sherman Act.
  - a) single entity
  - b) joint venture
5. Suppose that inverse demand for a Luke Falk jersey is:  $P = 150 - 2q$ . What is the marginal revenue?
  - a)  $MR = 150 - 4q$

**b)**  $MR = 150 - 2q$

**c)**  $MR = 150$

**d)**  $MR = 4$

6. Suppose that there are only 10 teams in a market, and each firm has an equal share of the market (in other words each firm has a share of 10%). The HHI in this market is \_\_\_\_\_ and thus is considered to be \_\_\_\_\_ concentrated.
- a) 2,500, moderately/highly concentrated
  - b) 10,000, highly concentrated
  - c) 100, unconcentrated
  - d) 1,000, unconcentrated
7. Why might eminent domain not benefit the consumer?
- a) It will always benefit the consumer.
  - b) Taxes will be increased to cover the costs of consumers not paying property taxes.
  - c) Fair market value does not exceed the consumers' subjective value.
  - d) Local residents will have to relocate in another city.
8. Suppose there are 50,000 fans that attend a basketball game at \$100 a ticket. And, suppose the marginal propensity to consume is 0.9. What is simple multiplier for an exogenous spending shock?
- a) 1
  - b) 2
  - c) 5
  - d) 10
9. Even though the MLB acts as a monopolist, it may have imperfect \_\_\_\_\_.
- a) substitutes
  - b) complements
  - c) competition

10. Suppose the San Francisco 49ers and the Golden State Warriors hold 2 of their games on the same days (a week apart). The 49ers increase the price of their tickets from 100 to 120, and the Warriors keep their prices the same. We see that the Warriors have an increase in attendance from 20,000 to 22,000. What is the cross-price elasticity?
- 1/2
  - 1/2
  - 2
  - 2
11. Suppose that the Seattle Seahawks find that the elasticity of demand for their tickets is  $-1/3$ . What is the Lerner index?
- 3
  - 1/3
  - 2
  - 1/2
12. Generally, what is an economist's main concern with a monopolist's limiting of quantity?
- The monopolist price gouges the consumer
  - It creates deadweight loss
  - The monopolist receives higher profit
  - It changes the demand
13. According to the book, most proposed rules and procedures do not work to create competitive imbalance because:
- they are too costly
  - they create excess demand
  - they can't be properly enforced
  - they cannot offset market forces
14. Suppose the demand for a team is given by  $P = 90 - 2Q$ , and the optimal price charged to the fans is  $P^* = 50$  and the optimal quantity is  $Q^* = 20$ . Up to what amount will a city be willing to subsidize the team for?
- \$50
  - \$400
  - \$800
  - \$0
15. Suppose a network wishes to bid for a network. If they win the bid, they will set price to  $P^* = 20$ , and find an optimal quantity of  $Q^* = 20$ . Their marginal cost is  $MC = 10$ , and total cost is  $TC = 10Q$ . Up to how much are they will to spend on bidding for the broadcasting rights?
- \$0

- b)** \$100
- c)** \$200
- d)** \$400

## Short Answer

Only choose **2 questions** to answer.

1. Suppose a firm has the following profit function:

$$\Pi = P(Q, A)Q - C(Q) - wA$$

where:

$$P(Q, A) = 100 - 2Q + 4A^{1/2}$$

$$MB_A = 2Q(A^{-1/2})$$

$$C(Q) = 2Q^2 + 20Q$$

$$MC_Q = 4Q + 20$$

$$w = 2$$

- a) Find the profit-maximizing quantity.

- b) Find the profit-maximizing level of advertising.

c) Find the profit-maximizing price.

d) Find the maximum profit.

2. Suppose that the ticket seller can price discriminate by checking IDs. There are two demands in the market:

$$\text{Adult Demand: } P_A = 170 - 2Q_A$$

$$\text{Student Demand: } P_K = 110 - 3Q_K$$

Suppose that marginal cost is 50, and total cost is  $50(Q_K + Q_A)$

- a) What is the profit maximizing price ( $P_A$ ) that will be charged to the adults?

- b) What is the profit maximizing price ( $P_K$ ) that will be charged to the students?

- c) What is the maximum profit achieved by profit discrimination?



3. Suppose the Pullman Bison play the Moscow Tigers in a stadium with a capacity of 33,000 seats. 25,000 seats are allocated to the home team (the Pullman Bison) and 8,000 seats are allocated to the away team (the Moscow Tigers). Suppose that each team can charge only one price (although the home price tickets and the away price tickets don't have to be the same). Also assume that away fans cannot purchase home tickets, and home fans cannot purchase away tickets. The demand for home tickets is given by the following function:

$$P_H = 240 - 5H$$

where  $H$  is the home attendance in thousands. The demand for away tickets is given by the following function:

$$P_A = 160 - 5A$$

where  $A$  is the away attendance in thousands. Lastly, assume that one group's demand is not affected by the other group's choices and that the marginal cost for both teams is \$20 and total cost is  $20H$  for the home team, and  $20A$  for the away team. Further assume that the home team is the team in the strong market, and the away team is the team in the weak market. Now suppose that the league employs **revenue sharing of 50-50**. Using the short run profit maximization approach:

- a) What is the profit-maximizing price and attendance for the Pullman Bison?

- b) What is the profit-maximizing price and attendance for the Moscow Tigers?