4.3 — Pricing Strategies — Practice Problems

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Promoters of a major college basketball tournament estimate that the demand for tickets for *adults* and by *students* are given by:

$$q_a = 5,000 - 10p_a$$
$$q_s = 10,000 - 100p_s$$

where a represents adults and s represents students. They estimate that the marginal and average total cost of seating an additional spectator is constant at $10.

1. The promoters wish to segment the market and charge adults and students different prices.

a. For each segment of the market, find the inverse demand function and marginal revenue function.

b. Find the profit-maximizing quantity and price for each segment.

c. How much total profit would the tournament earn if they could price discriminate?

2. Now suppose they could not price discriminate, and were forced to charge the same price for all attendees.

a. Find the total market demand function.

b. Find the inverse demand function for the total market, and then the marginal revenue function.

c. Find the profit-maximizing quantity and price for the whole market.

d. How much total profit would the tournament earn if they could not price discriminate?