ECON436: Economics of Health and Healthcare

Problem Set #2: Efficiency and Competition

Submit via Problem Set Quiz (closes September 24th at 11pm EST)

Efficiency. Use this information for Questions #1 through #4. Suppose that Charlie, Blake, and Rowan all start with $100 each (the "baseline scenario"). Further assume that they have identical utility functions, where:

$$u = money$$

In other words, they care only about money.

They are evaluating different scenarios, all of which are included in the table below.

Scenario	Charlie	Blake	Rowan
A	81	119	99
B	109	112	100
C	80	108	108
D	115	112	91
E	114	99	94

1. Which scenario(s) represent **Pareto Improvements** over the baseline scenario? Select all that apply. (5 points)

2. Which scenario(s) represent **Kaldor-Hicks Improvements** over the baseline scenario? Select all that apply. (5 points)

3. Which scenario(s) would be considered **Pareto Efficient** if they had been the baseline scenario? (i.e., if participants started $81, $119, and $99 as they did in Scenario A, could they Pareto improve by moving to B, C, D, or E? Repeat this exercise with each scenario's endowments.) Select all that apply. (5 points)

4. Which scenario(s) would be considered **Kaldor-Hicks Efficient** if they had been the baseline scenario? Select all that apply. (5 points)

Monopoly. Use this information for Questions #5 through #9. Suppose there is a monopolist that faces an *inverse* demand curve of $280 - 3q$ and has $MC = q$.

Solve the profit-maximization problem to answer the questions below. (hint: marginal cost is the derivative of total revenue ($p \times q$) with respect to quantity and has twice the slope of the inverse demand curve.)

Round to the nearest whole number (as necessary).

5. What is the profit-maximizing quantity? (10 points)

6. What is the profit-maximizing price? (10 points)

7. What is the deadweight loss? (5 points)

Use the following information for questions #8 through #10 only: Suppose the government passes a policy that limits the price in this market from rising above $100 per unit (price ceiling).

8. What is the new equilibrium quantity? (5 points)

9. What is the new deadweight loss? (5 points)

10. Which price floors would move the market closer to the efficient outcome of zero deadweight loss? Select all that apply. (5 points)

    a. A price floor greater than the monopoly price.
    b. A price floor less than the monopoly price, but greater than the perfect competition price.
    c. A price floor less than the perfect competition price, but greater than the marginal cost at the monopoly output.
    d. A price floor less than marginal cost at the monopoly output.

Use the following information for questions #11 and #12 only: Suppose there are now two types of customers with the following inverse demand curves:

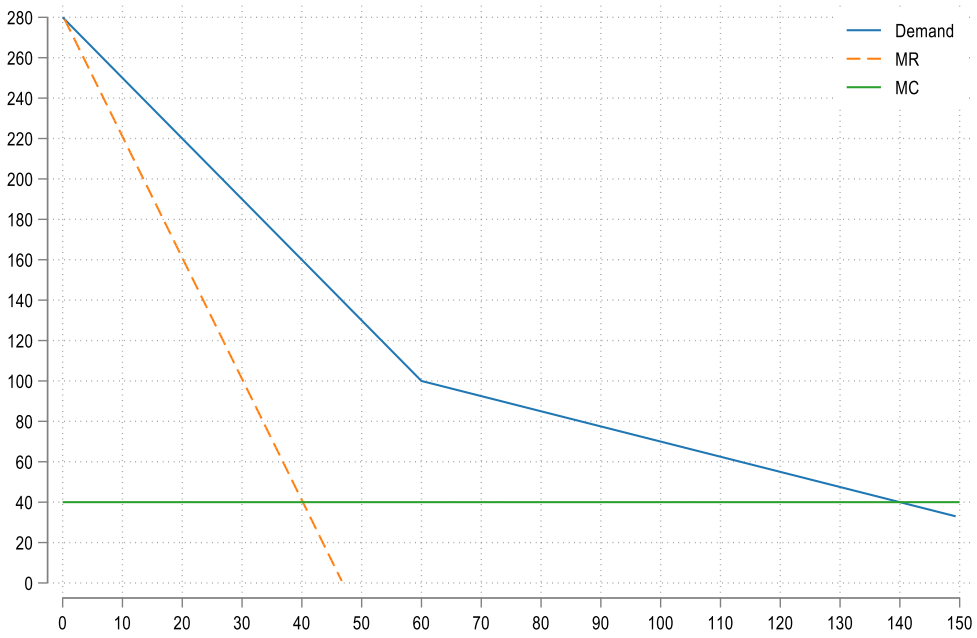
$$p_1 = 280 - 3q_1$$
$$p_2 = 100 - q_2$$

Suppose also that is an equal number of consumers in each group, so that the combined market inverse demand curve is:

$$p = 280 - 3q \text{ if } p > 100$$
$$p = 145 - \frac{3}{4}q \text{ if } p \leq 100$$

For simplicity, assume that marginal cost is now constant at $40 (MC = $40).

Finally, as a guide, the graph for the combined market looks like:



11. If the monopolist were allowed to price-discriminate against these two groups (3rd-degree price discrimination), how **consumer surplus** change relative to a single-price monopoly? (5 points)

    a. Increase
    b. Decrease
    c. No change
    d. Not possible to determine with the given information

12. If the monopolist were allowed to price-discriminate against these two groups (3rd-degree price discrimination), how **consumer surplus** change relative to a perfect competition? (5 points)

    a. Increase
    b. Decrease
    c. No change
    d. Not possible to determine with the given information

13. **Bilateral Monopoly.** The San Jose, CA metropolitan area has some of the highest inpatient prices in the country. It also qualifies as a concentrated hospital market, with an HHI over 2,500.

    If all the all the health insurance companies serving San Jose merged, what is the **most likely** impact on San Jose's inpatient prices, according to economic theory? (10 points)

    a. Increase
    b. Decrease
    c. No change

HHI. Use this information for Questions #13 through #15. The market share for each hospital in the Fictionville Metropolitan Area are given by the following table.

Hospital	Share (in %)
A	23
B	20
C	22
D	18
E	17

14. What is the HHI for Fictionville? (5 points)

15. According to their guidelines, how would the Department of Justice ("DOJ") classify this market? (5 points)

    a. Competitive
    b. Moderately Concentrated
    c. Highly Concentrated
    d. Monopolistic
    e. None of the above

16. If Hospital A and Hospital E were acquired by the same Parent Company how would the DOJ classify this market? (5 points)

    a. Competitive
    b. Moderately Concentrated
    c. Highly Concentrated
    d. Monopolistic
    e. None of the above

17. **Mark-up.** Suppose a nutritional supplement company determines that, for every 1% increase in the price, there is a resulting 1.5% drop in quantity sold.

    They also know that their marginal cost equals $10 for each bottle of supplements that they produce.

    What price should the firm sell their supplements at if they wish to maximize profits? (5 points)