TAYLOR'S VERSION

ECON 0100 | Part B

Demo B1

This MiniExam will take 15 minutes with quick break to follow. MiniExams are designed to both test your knowledge and challenge you to apply familiar concepts in new environments. Treat it as if you're trying to show me that you understand the material. Answer clearly and completely.

Academic Conduct Code

The following academic conduct code is designed to protect the integrity of your work. Print your name/initials beside the five academic honesty agreements. I pledge to my fellow students, the university, and the instructor, that:

TW I will complete this MiniExam solely using my own work.
TW I will not use any digital resources unless explicitly allowed by the instructor.
TW I will not communicate directly or indirectly with others during the MiniExam.

Q1. Consumer Surplus

Preferences for butter beer can be represented by the following demand curve:

$$D: P = 100 - \frac{1}{2}Q_b \tag{1}$$

Use a graph to plot this demand curve, including the quantity demanded at both 40 galleons and 50 galleons. Then find and label the consumer surplus at these prices.

Q at 40 galleons: 120

CS at 40 galleons: 3600

Q at 50 galleons: 100

CS at 50 galleons: 2500

$40 = 100 - \frac{1}{2}Q$

$\frac{1}{2}Q = 60 \rightarrow Q = 120$

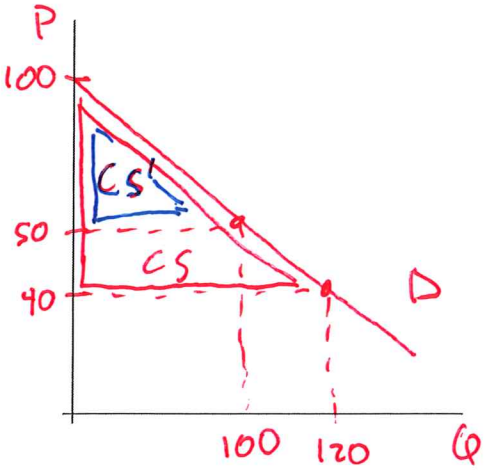
$CS = 60 \cdot 120 \cdot \frac{1}{2} = 3600$

$50 = 100 - \frac{1}{2}Q$

$50 = \frac{1}{2}Q$

$Q = 100$

$CS' = 50 \cdot 100 \cdot \frac{1}{2} = 2500$



Q2. Producer Surplus

The supply curve for butter beer can be represented by the following equation:

$$S : P = 10 + \frac{2}{3}Q_s \tag{2}$$

Use a graph to plot this supply curve, and find and label the producer surplus at both 40 galleons and 50 galleons.

Q at 40 galleons: 45

PS at 40 galleons: 675

Q at 50 galleons: 60

PS at 50 galleons: 1200

$40 = 10 + \frac{2}{3}Q \rightarrow \frac{2}{3}Q = 30$

$\rightarrow Q = 30 \cdot \frac{3}{2} = 45$

$PS = 30 \cdot 45 \cdot \frac{1}{2}$

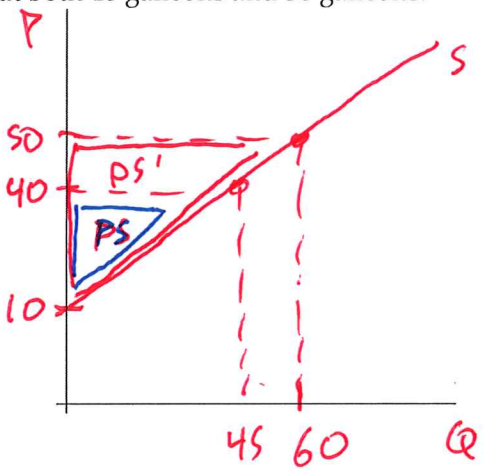
$= 675$

$50 = 10 + \frac{2}{3}Q$

$\hookrightarrow \frac{2}{3}Q = 40$

$\hookrightarrow Q = 40 \cdot \frac{3}{2} = 60$

$PS' = 40 \cdot 60 \cdot \frac{1}{2} = 1200$



Q3. Equilibrium

What is the market equilibrium price, quantity, and total surplus? Use a graph and algebra to analyze this market.

P*: 430/7

Q*: 540/7

TS = PS + CS: _____

$100 - \frac{1}{2}Q^* = 10 + \frac{2}{3}Q^*$

$90 = \frac{1}{2}Q^* + \frac{2}{3}Q^* = \frac{3}{6}Q^* + \frac{4}{6}Q^*$

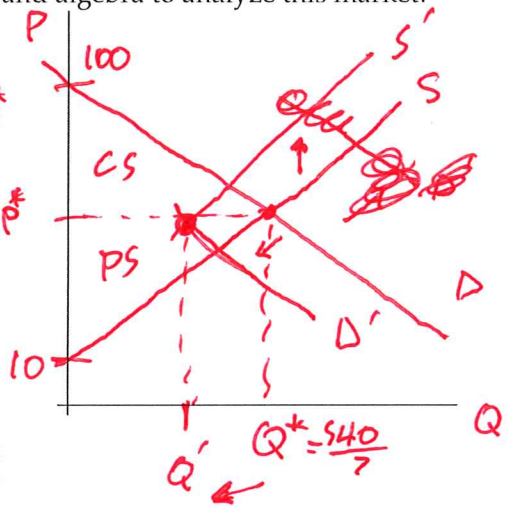
$90 = \frac{7}{6}Q^*$

$Q^* = 90 \cdot \frac{6}{7} = \boxed{\frac{540}{7}}$

$P^* = 10 + \frac{2}{3} \cdot \frac{540}{7}$

$\boxed{P^* = \frac{430}{7}}$

$TS = 90 \cdot \frac{540}{7} \cdot \frac{1}{2}$



Q4. Comparative Statics

Butter beer has culturally been associated with a good time. This all changed when a high profile wizard went viral slamming the taste. At the same time an ingredient of the drink, butter extract, became incredibly difficult for butter beer makers to acquire. Use the graph (*above*) to discuss the effect these two events had on the butter beer market.

Demand: UP, CONSTANT, DOWN

Supply: UP, CONSTANT, DOWN

Prices: UP, CONSTANT, DOWN, INDETERMINANT

Quantity: UP, CONSTANT, DOWN, INDETERMINANT