Econ 101 | MiniExam E1

This MiniExam will take 20 minutes with a break to follow. MiniExams are designed to both test your knowlege 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. Show your work so I can understand your thought process for partial credit. And answer clearly and completely.

Accademic Conduct Code

The following accademic conduct code is designed to protect the integrity of your work, not to make school feel overbearing. Print your name/initials beside the five accademic honesty aggreements before beginning.

_____ I pledge to my fellow students, the university and the instructor, that I will complete this MiniExam solely using my own work.

_____ I will use the internet only to submit the MiniExam to Box. I will use no other online resources unless explicitly and individually cleared by the instructor.

_____ I am free to use hardcopy resources (the textbook, printed materials, hardcopy notes). I am allowed to use digital resources (resources stored on my computer, table, or phone) explicitly and individually cleared by the instructor.

_____ I will not communicate with others about the MiniExam, either in the room or remotely with a communication device.

_____ I will not discuss the MiniExam with students who did not take the MiniExam during the same class period.

"You got your quills ready?"

The Caulron Consolidation

In the wizarding world, the invention of the self-stirring cauldron revolutionized potion-making. Since the invention was so old, through, the original patent holder has been joined in the market by many other companies replicating the self-stirring technology. Until recently the market has been stable, with no meaningful firm entry or exit. The initial market price was $P = 20$.

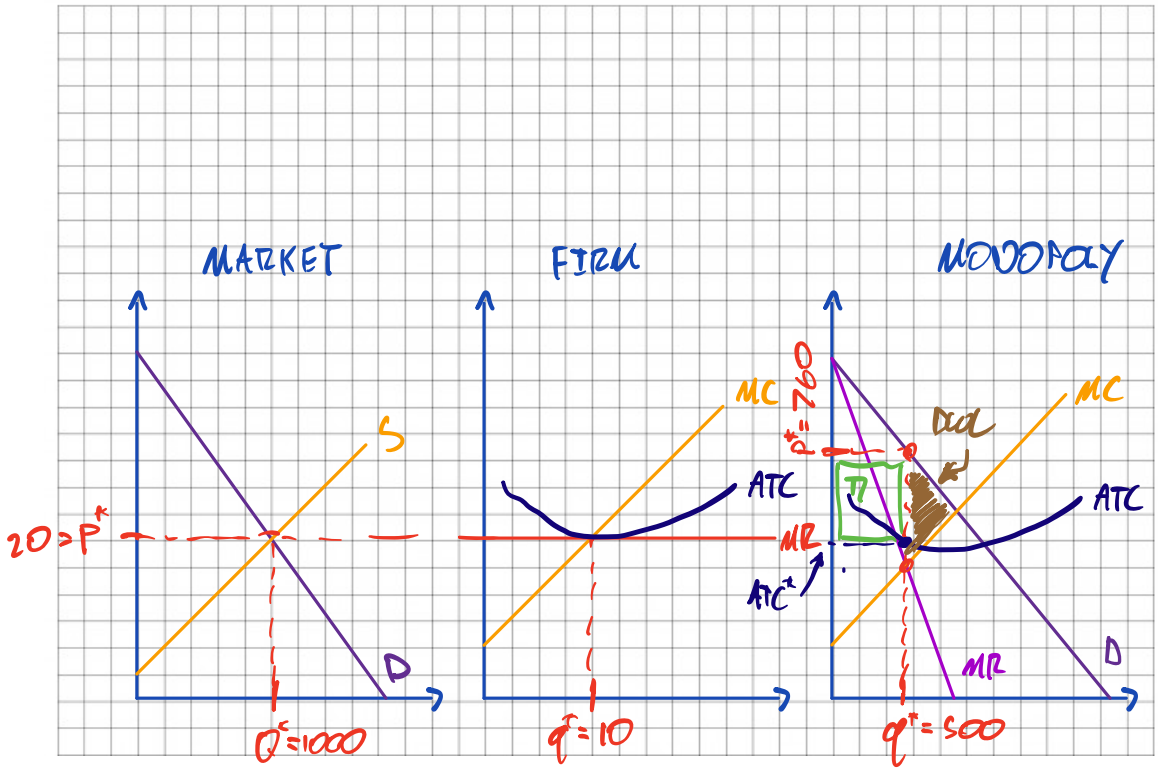
Firm's produce with some positive fixed costs, a marginal cost and demand curve according to the following equations.

$$MC = Q + 10$$
$$D : P = 1010 - \frac{1}{2}Q$$

In recent years a new aggresive maker, Cauldron Charmers, received venture capital funding and has begun buying up other cauldron makers and suing those who refuse. This has led to considerable consolidation since many firms exited the market, fearing legal action, and many others sold to Cauldron Charmers. Today, Cauldron Charmers sells nearly all cauldrons. Their marginal revenue after the consolidation:

$$MR = 1010 - Q$$

Use a few graphs to describe the evolution of the self-stirring cauldron market in recent years.



Use the following questions to guide your answers. Be sure to include your answers below on the graph above and offer a verbal description of the market consolidation above.

Question 1 | Initial Price and Quantity

Solve for and graph (above) price and quantity before the market consolidation.

$MR = MC$

$10 + q = 20$

$\boxed{q^* = 10}$ $\quad$ GIVEN $\boxed{P^* = 20}$

Question 2 | Initial Profit

Graph but do not solve for profit for a firm before the market consolidation.

ON GRAPH: $\Pi = 0$

Question 3 | Consolidated Price and Quantity

Solve for price and quantity after the market consolidation.

$MR = MC$

$1010 - Q = 10 + Q$

$1000 = 2Q$

$\boxed{q^* = 500}$

$P^* = 1010 - \frac{1}{2} \cdot 500$

$\boxed{P^* = 760}$

Question 4 | Consolidated Profit

Graph but do not solve for the firm's profit after the market consolidation.

ON GRAPH: $\Pi > 0$

Question 5 | Deadweight Loss

Solve for the deadweight loss after the market consolidation.

$DWL = \frac{1}{2}(760 - 510)\left(\frac{2000}{3} - \frac{1500}{3}\right)$

$= \frac{1}{2} \cdot 250 \cdot \frac{500}{3}$

$\boxed{DWL = \frac{250 \cdot 250}{3} \approx 20,833\overline{3}4}$

Q_{SP}: $MB = MC$

$10 + Q = 1010 - \frac{1}{2}Q$

$\hookrightarrow Q_{SP} = \frac{2000}{3}$