

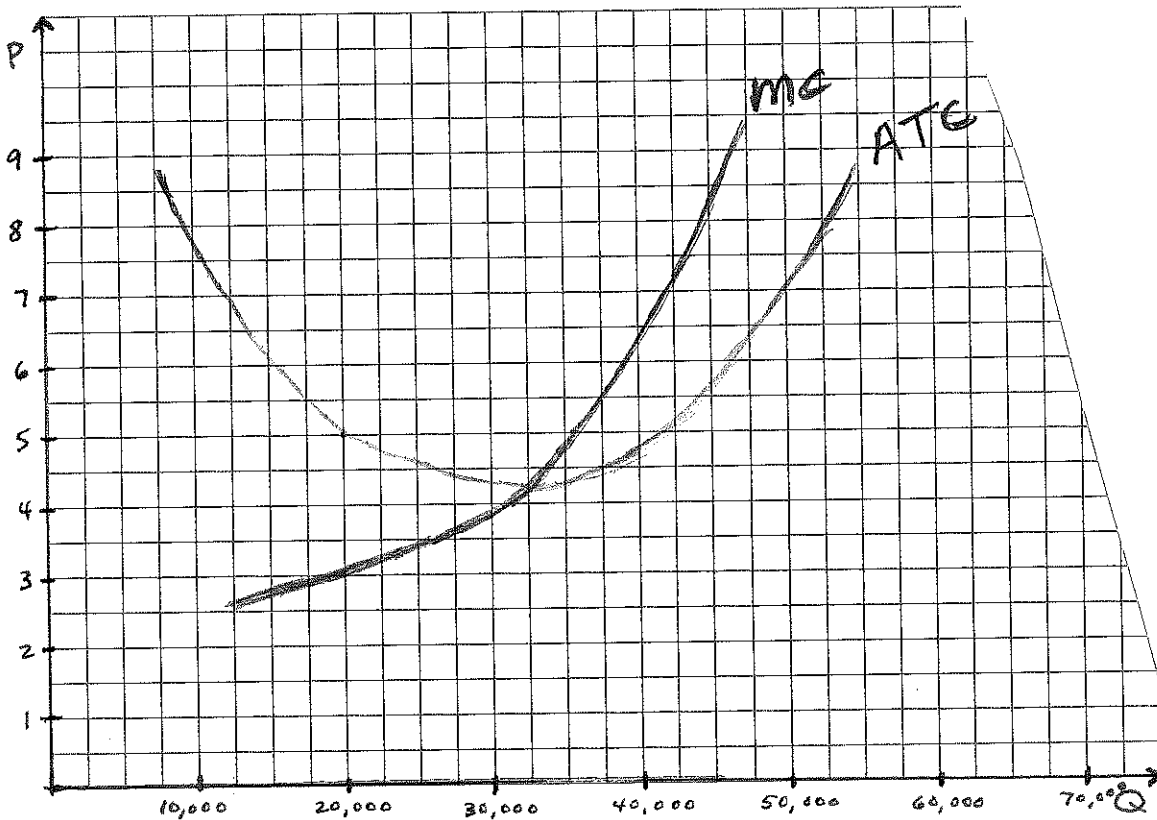
ECO 610 Final Exam
July 2018

Name: _____
4-digit number: _____

100 points total. Point values for each question are as indicated. Answer each question in the space provided. General advice: show your work, including any formulas or diagrams that you use in reasoning through your answers.

1. (10 pts.) We discussed five reasons why a firm might want to “make” instead of “buy” in its supply chain strategy. Pick any three of the five, briefly explain, and then give an example that illustrates the point.

2. (10 pts.) At your tenth high school reunion, two of your good friends approach you with a business proposition. They have drifted from one job to another since graduating from high school, but both are now working at one of the dozen or more craft breweries in central Kentucky. They have a good understanding of how average and marginal costs vary with output, and sketch it for you in the diagram below. They think that they can earn an above-normal return in this industry if they start their own brewery. Having partnered as an MBA student with a company that produces craft beer, you know that monthly demand for a company like this is given by $Q = 70,000 - 10,000 \cdot P$, where Q is monthly quantity demanded in pints and P is the price per pint in dollars. Illustrate in the diagram what price and output will maximize profits for them, and show them what their expected long-run economic profits will be.



3. (5 pts.) After they listen to your answer, they tell you that they have seen the externally reported financial records of their current employer, and it is making profits year in and year out just like all the other craft brewers. How do you respond?

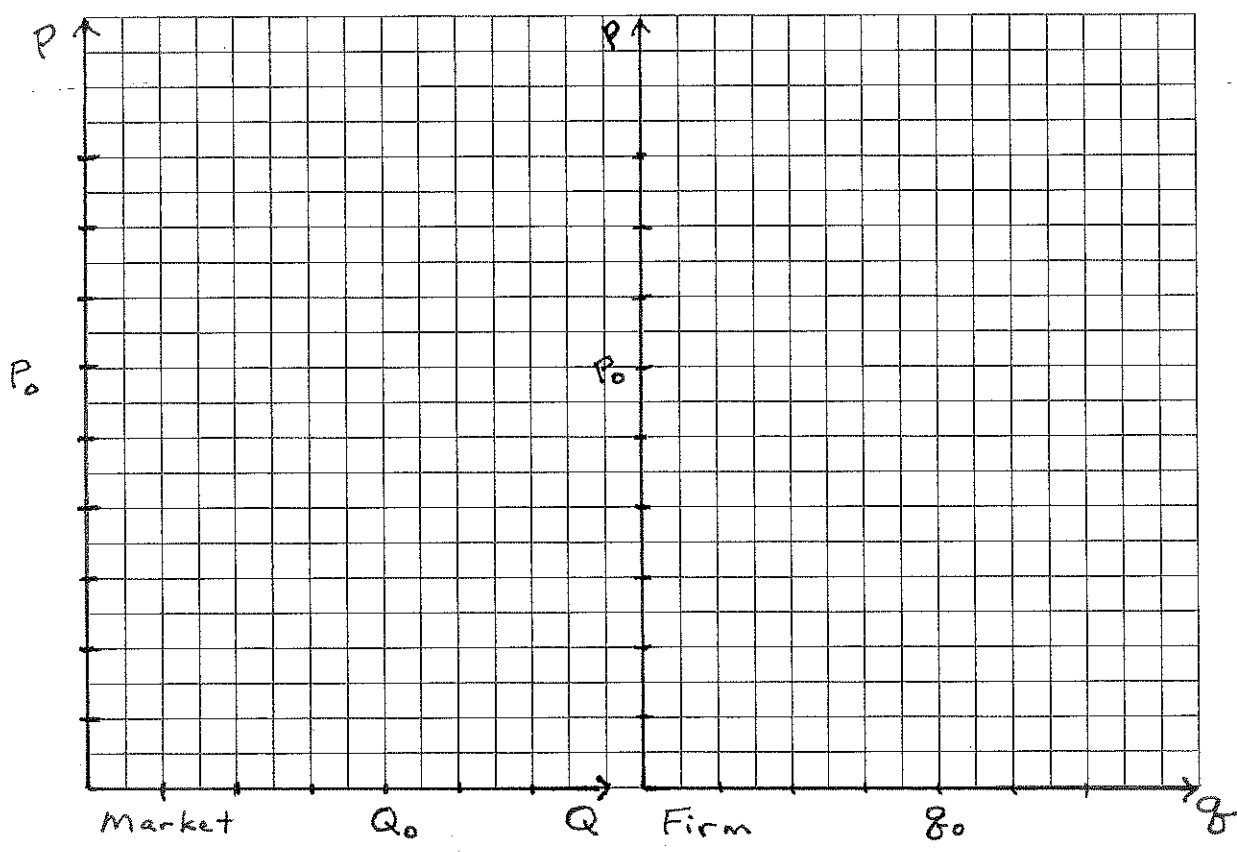
4. (10 pts.) The clarity of your previous two answers causes your friends to re-think their futures. They have a falling out, and each of them decides independently to return to your and their hometown, East Liberty, and start a craft brewery there. East Liberty is a geographically isolated town in western Kentucky that currently has no craft breweries. One friend, Rick, shares the three business concepts he is contemplating for his brewery: R1 - warm dark frothy beers; R2 - lighter fruit-flavored ales; and R3 - Budweiser-inspired lagers. The other friend, Carol, tells you that she has four possible strategies in mind: C1 - cold dark frothy beer; C2 - lighter international ales; C3 - Coors-inspired lagers; and C4 - vegetable-based pale ales like her own creation, Pale Kale Ale. Since it is a small town and everyone knows what everyone else is up to, they both know the strategies their rival is considering and the resulting payoff matrix:

| | | Carol's strategies | | | |
|-------------------|----|--------------------|--------|--------|--------|
| | | C1 | C2 | C3 | C4 |
| Rick's strategies | R1 | 8, 8 | 11, 7 | 12, 6 | 13, 5 |
| | R2 | 7, 11 | 10, 10 | 13, 9 | 14, 7 |
| | R3 | 6, 12 | 9, 13 | 12, 12 | 12, 10 |

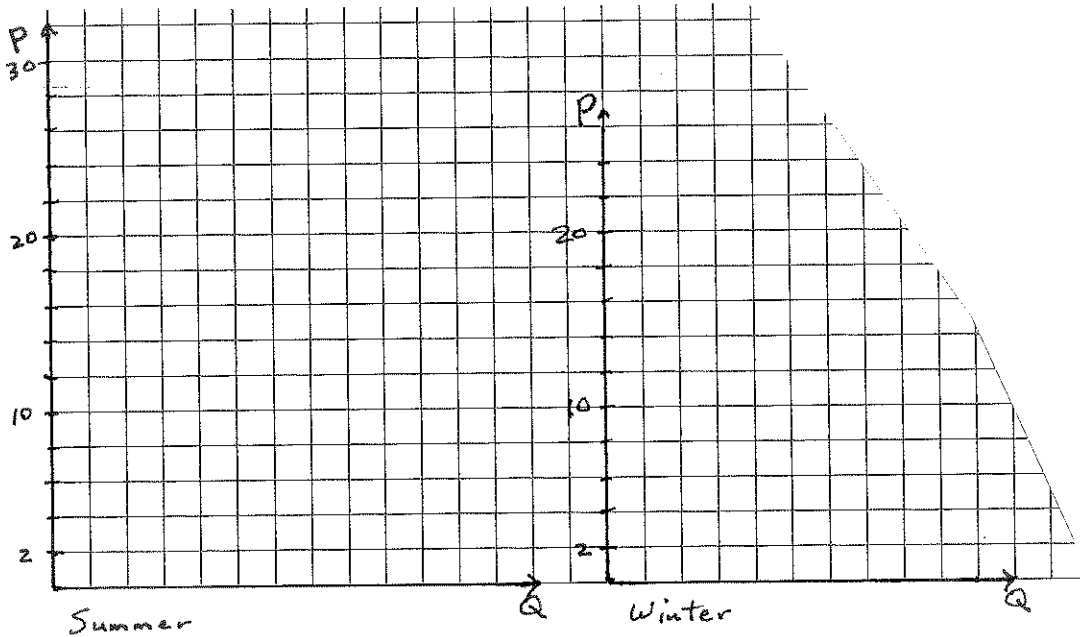
If they both choose their business strategies simultaneously, solve this game using the solution strategies we discussed in class and explain how you arrive at your answer. When you return to East Liberty, what kind of beer do you expect to be able to drink at each craft brewery brew-pub?

5. (10 pts.) Suppose Carol is contemplating taking a world cruise prior to returning to East Liberty to start her craft beer business. That would give Rick a head start and enable him to choose his business strategy first. Carol would be left to choose her strategy second, after seeing what move Rick had already made. Would you advise Carol to go ahead with her travel plans or to postpone her trip and move back home so she can get started at the same time Rick does? Carefully draw the game tree and explain the basis for your advice to her.

8. (20 pts.) Hog farmers are experiencing sharp declines in pork prices. Recently imposed tariffs on U.S. meat products by foreign governments have reduced demand for U.S. pork, beef, and chicken, sending prices downward. Pork prices have dropped 16.7%. Assume that the market had been in long-run equilibrium at price P_0 and output Q_0 and that a typical hog farmer produced output q_0 at that price.
- Illustrate this long-run equilibrium in the diagram below, showing how market price and output are determined. Then draw the firm's demand and cost curves and show its optimal output and profits.
 - Now show the short-run impact of a decrease in market demand on market price and output. Then show the typical farmer's optimal output, and the farmer's economic profitability.
 - If the trade war turns out to be long-lived and the decline in demand is permanent, explain the long-run adjustments that will occur in this market.



9. (10 pts.) The Greek government charges 20 euros for admission to the Acropolis during the summer and 10 euros during the winter. If they are charging the profit-maximizing prices in summer and winter, illustrate the Demand, Marginal Revenue, and Marginal Cost curves consistent with such behavior. Assume for simplicity that marginal cost is constant at 2 euros per customer. After you illustrate this outcome, calculate own-price elasticity of demand for summer and winter visitors, showing how you arrive at your answer.



10. (5 pts.) The University of Kentucky price discriminates between in-state and out-of-state students, charging the latter group a significantly higher price for tuition than the former group. Why doesn't the UK bookstore likewise charge higher prices for textbooks to out-of-state students than in-state students?
11. (5 pts.) True or false and briefly explain: If the market price of strawberries is so low that strawberry farmers cannot cover their fixed costs in the short run, they should shut down, i.e. not harvest the strawberries.