

3. (10 pts.) Based on assigned WSJ articles you have read in the second half of the course, briefly discuss the market structure and competitiveness of the markets for (a) small (<100 passengers) regional passenger jets, (b) medium-sized single-aisle passenger jets, and (c) jumbo multi-level passenger jets.

4. (5 pts.) True or False and explain. You can avoid the interest expense of financing your education through an educational loan if you borrow from yourself, taking money out of personal savings or investment accounts.

5. (10 pts.) Suppose that the 117 existing alligator farmers in the U.S. are able form an agricultural cooperative and effectively monopolize the market for alligator skins and meat. Your boss Ralph wonders what that is going to do to alligator prices in the short run and in the long run. He asks you to conduct a Porter's Five Forces analysis of the alligator market, and then predict and explain the trajectory of prices over the next 5-10 years.

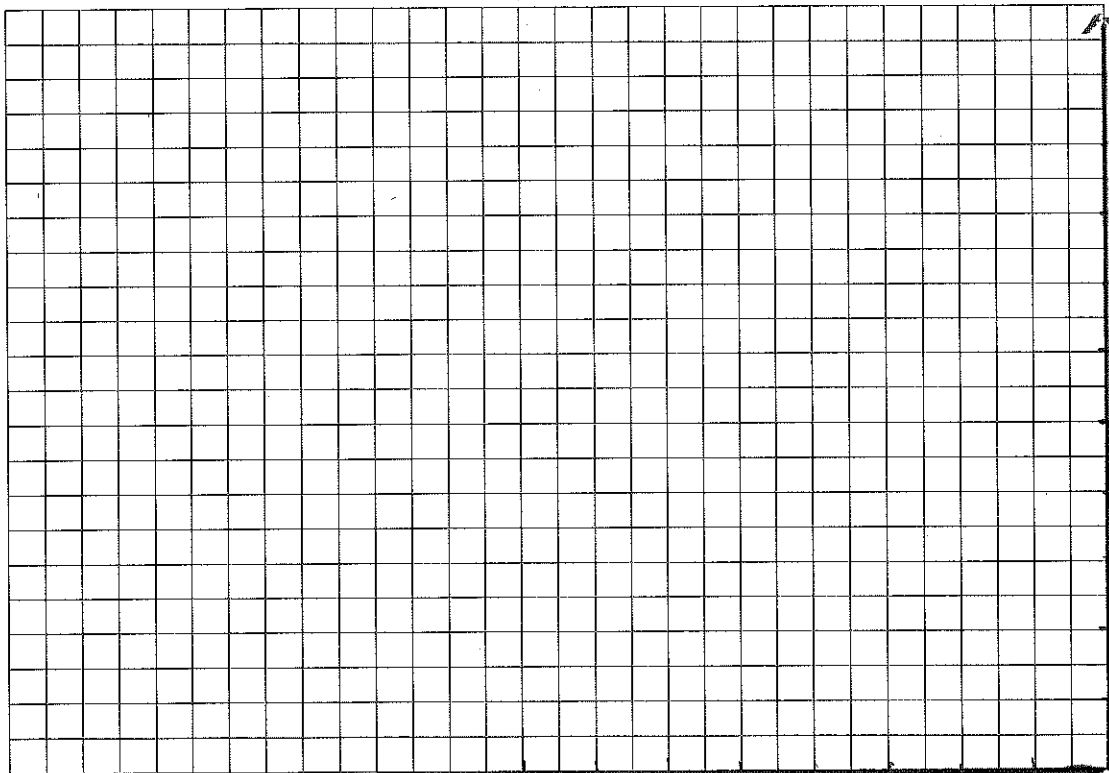
6. (20 pts.) *Lexington Herald-Leader*: "Flourishing hemp industry bringing jobs to Kentucky." *Los Angeles Times*: "As Tobacco Sales Dry Up, Kentucky Farmers Look to State's 'Original Crop'—Hemp."

Information to use in your analysis: Hemp grain is currently selling for anywhere between \$0.60-\$0.65 per pound, and on average, hemp farmers get about 1000 lbs. of hemp grain per acre. After taking into account costs, which can range from \$300 to \$350, farmers can make around \$250 to \$300 per acre. In 2018 approximately 80,000 acres of hemp were planted in the U.S., i.e. 80 million pounds of hemp were produced. A typical hemp farmer in Kentucky devoted 60 acres to hemp production.

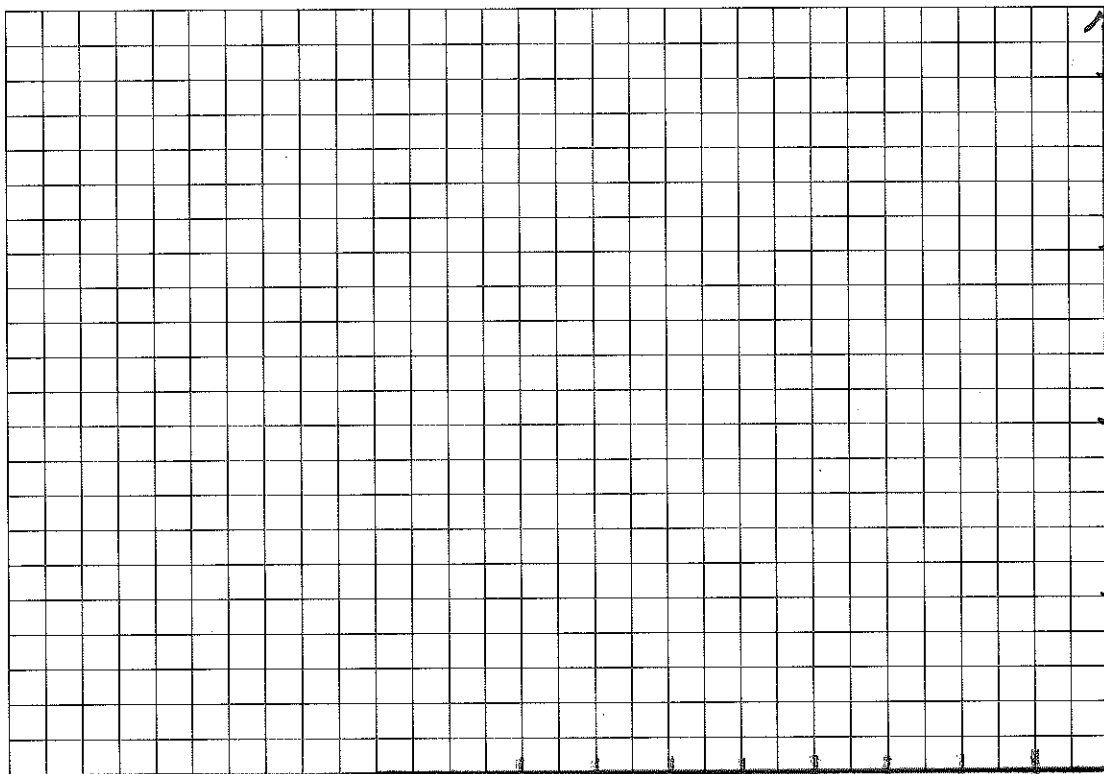
Now for the question:

- a) In the attached diagrams illustrate the current conditions in the U.S. hemp market and explain briefly how the price of hemp is determined. Also illustrate and explain the situation facing a typical Kentucky hemp farmer. Sketch in the farmer's ATC and MC curves, and show the farmer's optimal output and economic profits.

- b) What do you think will happen over time? Do you expect these rosy conditions to last? Illustrate and explain the changes you think will occur over the next five years. What will happen to the price of hemp? The number of hemp farmers? The economic profitability of hemp farming? Illustrate in your diagrams and link your verbal explanation to your diagrams.



hemp farmer
(1 acre \Rightarrow 1000 lbs. of hemp)



hemp market
(million pounds)

P
(\$/lb)

0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10

P
(\$/lb)

0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10

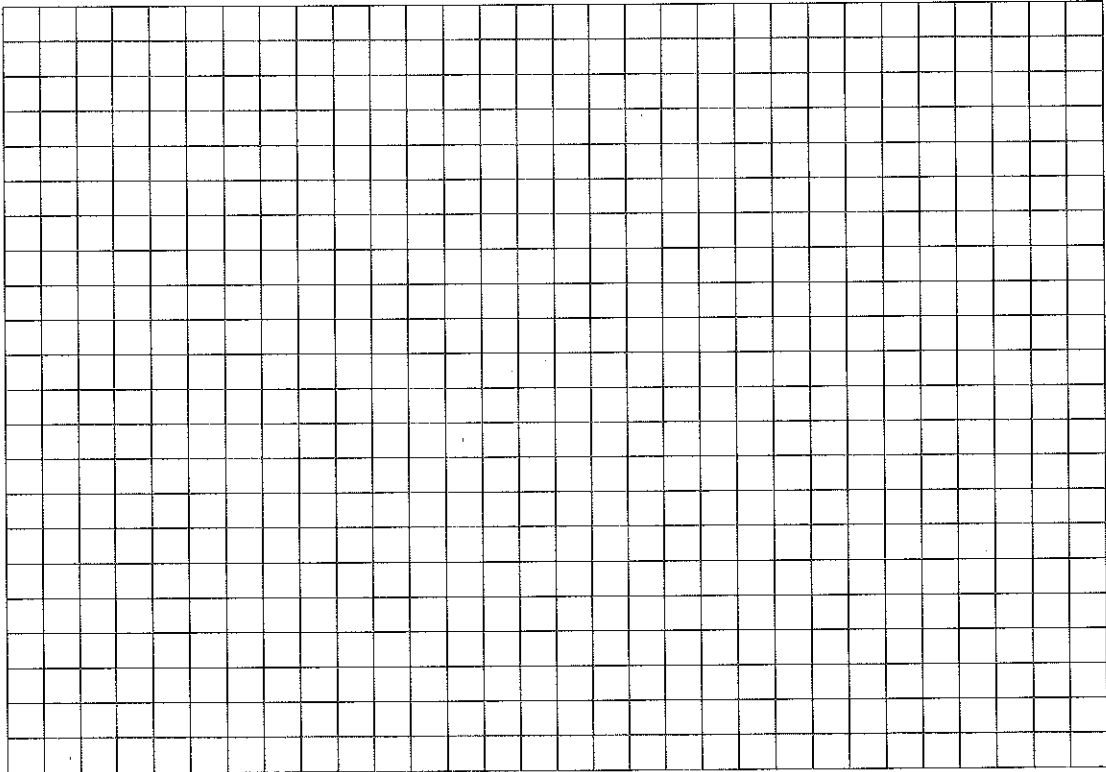
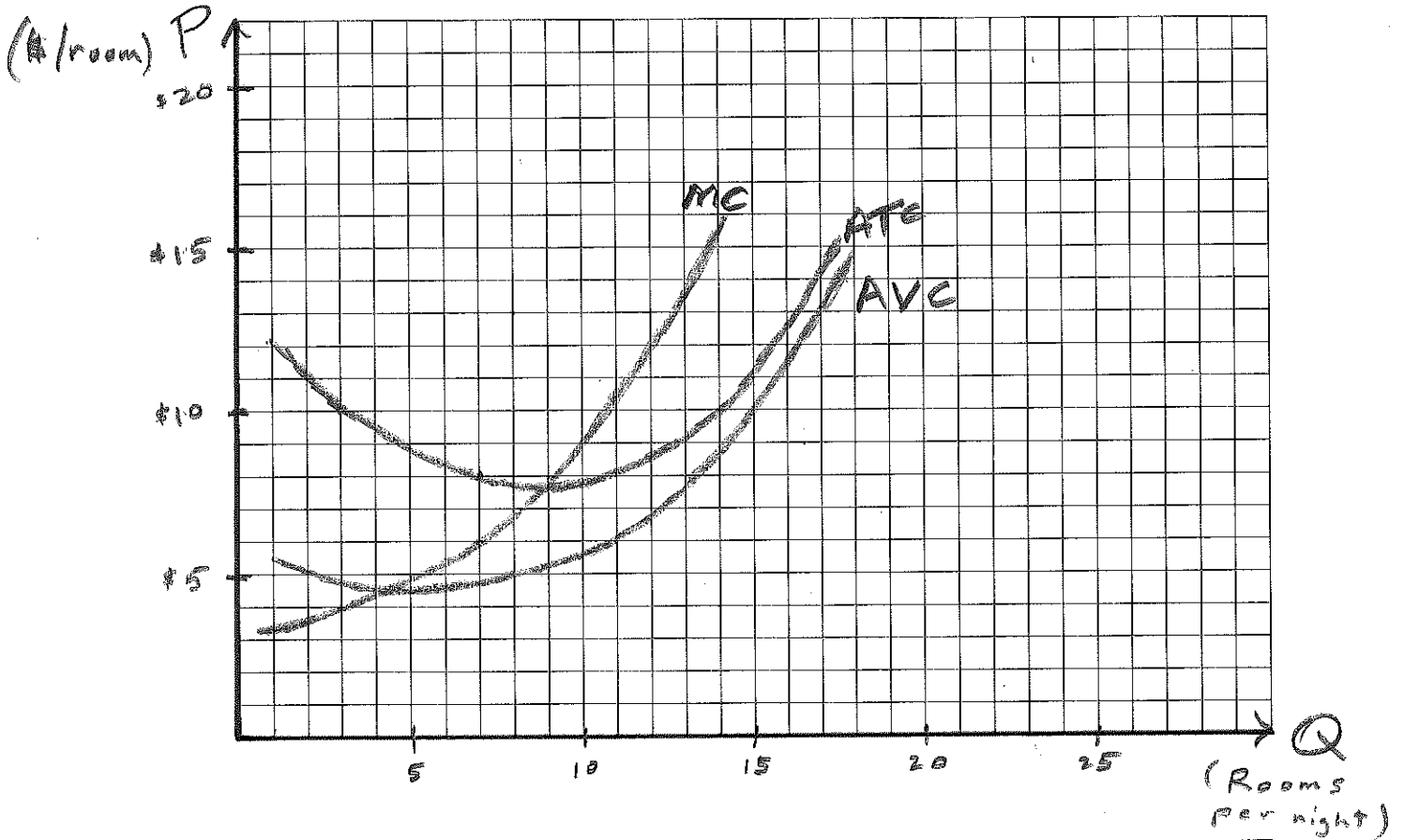
Q
(000,000)

50 100 150 200

7. (15 pts.) The state of Kentucky decides to develop a state park in a fairly remote location in eastern Kentucky, high in the mountains along a river that cuts a deep canyon and has abundant trails and overlooks. They anticipate that lots of outsiders (tourists) will want to visit the park, and some of them may even want to stay overnight. They decide that, rather than the state government owning and operating a hotel/lodge, they will outsource this part of the resort to a private-sector owner-operator. You see an opportunity here, and decide to study demand and costs to determine whether this would be economically profitable. Here is what you discover. Demand is seasonal, with six months on-season and six months off-season. On-season demand is given by $Q = 20 - P$, where Q is the number of rooms demanded per night and P is the price of a room in dollars. Off-season demand is given by $Q = 10 - P$. [Note: the year is 1954, and a dollar would purchase much more in 1954 than in 2019.] Average variable costs, average total costs, and marginal costs are as illustrated in the attached diagram. Now for the question. What price and quantity (number of rooms rented per night) will maximize profits or minimize losses in the off-season? In the on-season? What will daily profits or losses be in each period? Explain how you arrive at your answers, and carefully illustrate in the diagram.

(5 pts.) Is this an economically viable proposition? If the state decides to auction off the rights to operate this monopoly hotel/lodge to the highest bidder, explain briefly how you would formulate your bid.

Diagram for Question # 2:



8. (10 pts.) The University of Kentucky and the University of Louisville are both considering entering the Executive MBA market. They are the only viable suppliers of EMBA's in the region, and both understand their own and their rival's position in the marketplace. UK can design and put together a program that is high quality, with a commensurate high price, or they can offer a lower quality EMBA that is also lower-priced. UL has a similar strategy choice. They have each independently estimated the economic payoffs to their alternative strategies, given the strategy choice of their rival. Since it takes time to plan curriculum and program delivery, and to recruit and admit students, this market interaction between UK and UL is best evaluated as a simultaneous-move game. The payoff matrix for this game is illustrated below:

		U of L	
		High price, high quality	Low price, low quality
U of K	High price, high quality	200, 40	350, 50
	Low price, low quality	280, 100	400, 80

What do you predict will be the outcome of this strategic game? Explain how you arrive at your answer, using solution strategies we discussed in class.

9. (10 pts.) Now suppose that the Gatton College MBA Policy Committee understands the difference between static games and dynamic games, and that they can speed up the development and launch of UK's EMBA program and beat UL to the market, i.e. move first in this game and leave UL to react to their strategy choice. Alternatively, they can drag their feet and let UL be first into the market and then react to UL's strategy choice. What would you recommend that they do? Illustrate your answer by drawing two game trees corresponding to the two different scenarios, and explain what the outcome of each of the games will be.