

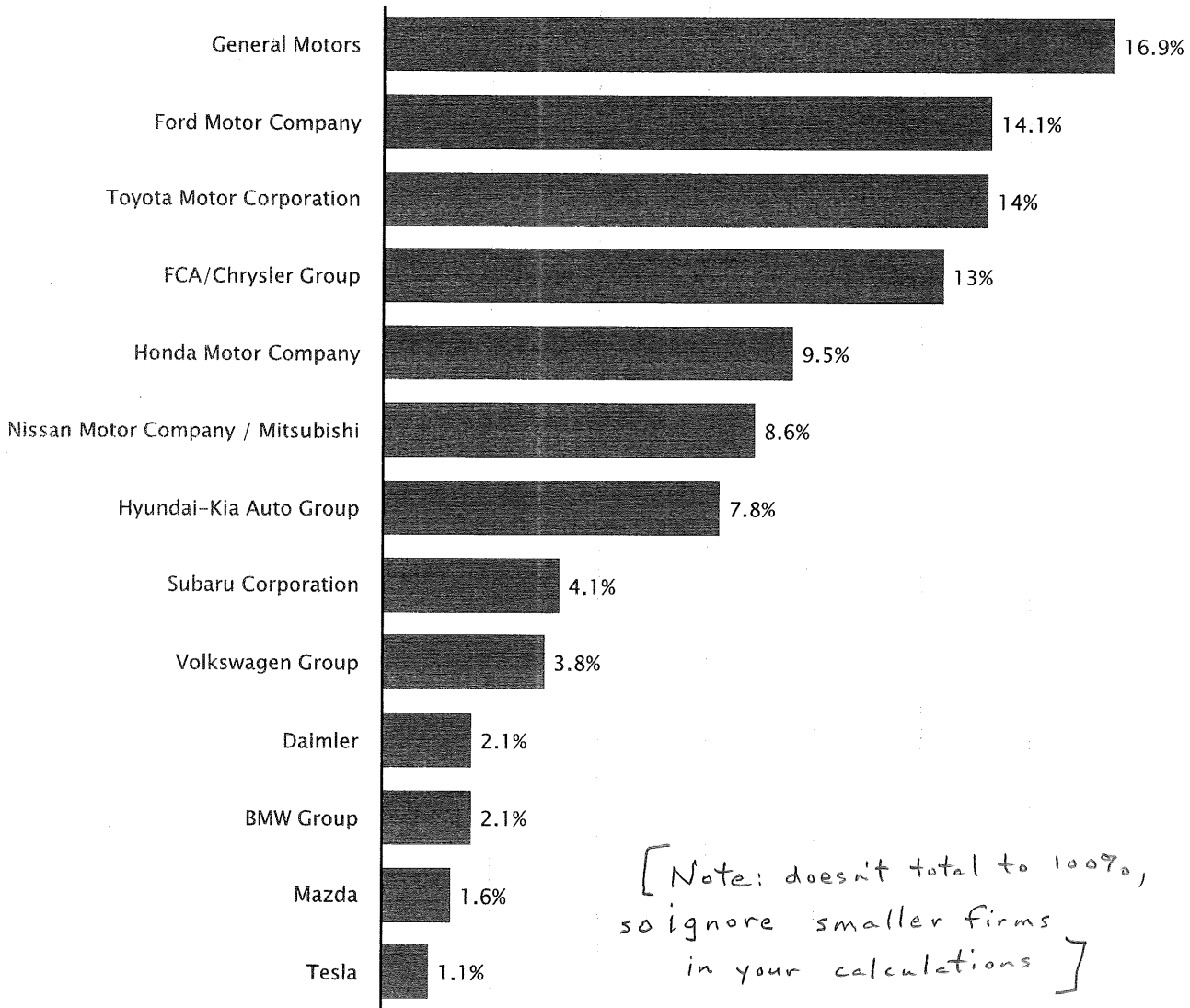
ECO 610
Final Exam-Sections 201/203
December 2020

Name: _____

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.) What market structure category best describes olive farming and unbranded olive oil? Explain your answer. And what market structure best describes branded olive oil? Again, explain your answer.

2. (10 pts.) Suppose Honda Motor Company were to merge with Nissan/Mitsubishi. Use the information below to calculate what would happen to the industry Herfindahl-Hirschman Index. How would you characterize (in terms of market structure) the automobile manufacturing industry?



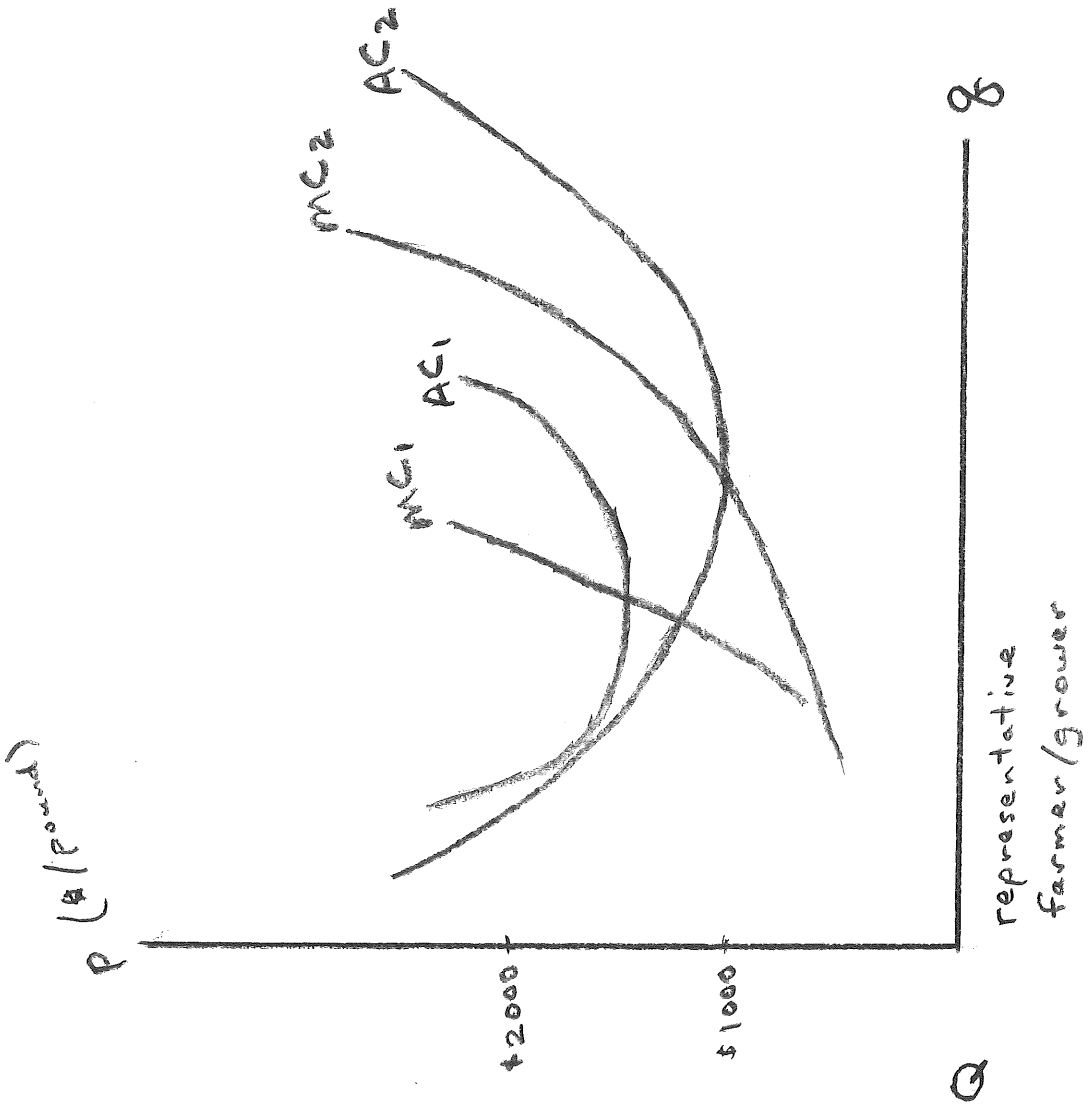
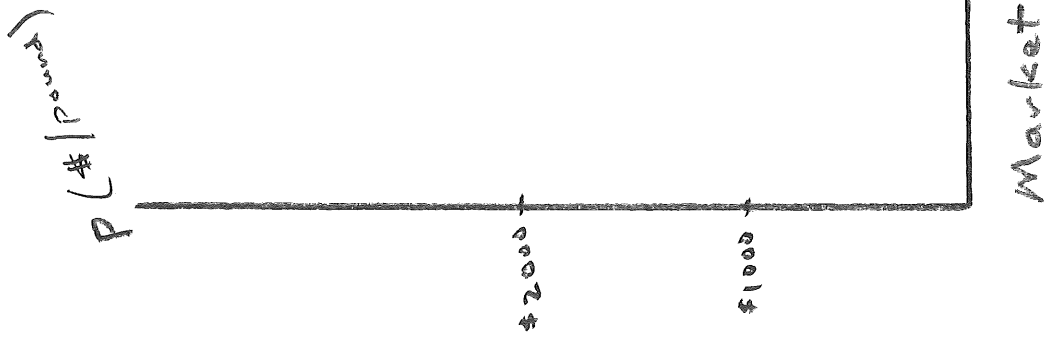
3. (30 pts.) Some factoids about marijuana farming in Oregon:

- **All recreational cannabis grown in Oregon must remain in Oregon.** This is mainly due to the continued federal prohibition of marijuana.
- **Every individual bud you get has been trimmed by hand. Every single one.** For the most part, this agricultural industry is still mainly accomplished with manual labor.

Oregon legalized marijuana farming in 2016, and initially prices were above \$2000 per pound for marijuana buds. People were lined up to get licenses to grow marijuana legally in the state because of the economic opportunity it offered. These individuals were very happy about becoming marijuana farmers.

- (a) Use the diagrams on the next page to illustrate market conditions giving rise to a price of \$2000 per pound in 2016. (Label the market output Q_0). Also explain which average cost curve you think represents the cost conditions facing a small-scale labor-intensive grower, and then show what output such a grower would choose to maximize profits under those market conditions. Illustrate this output (label it q_0) and the profits earned by a typical grower in 2016.

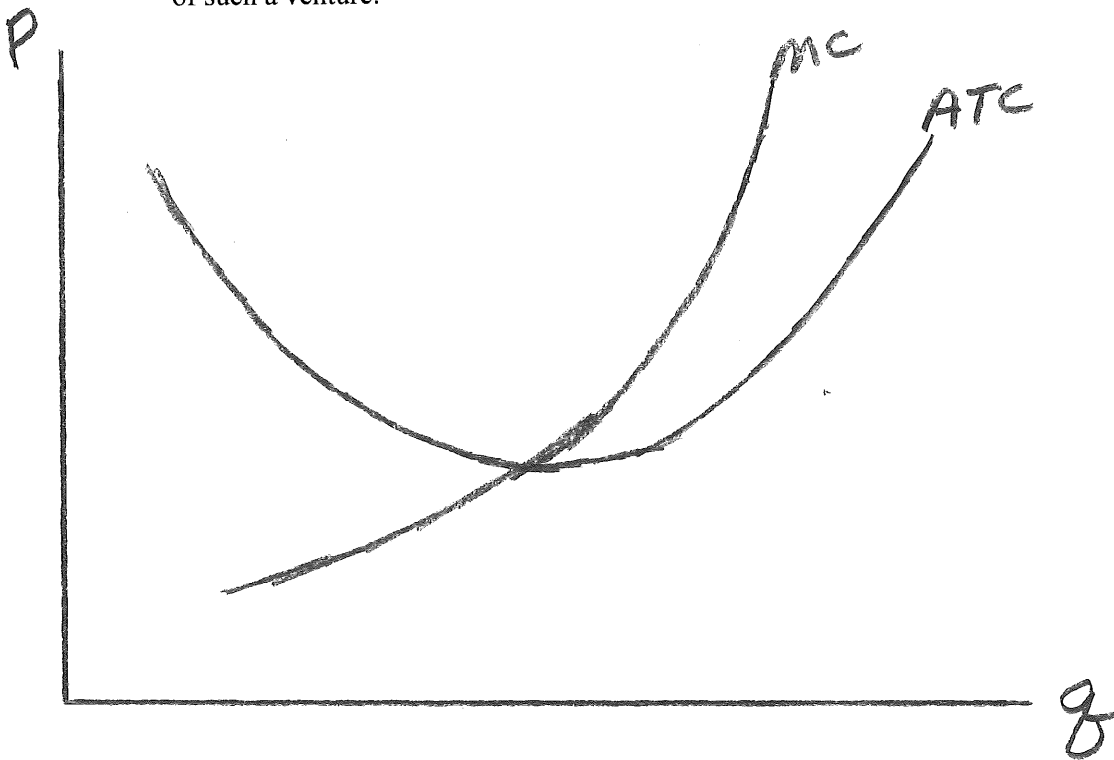
- (b) As long as Oregon remains a self-contained market, with production and consumption confined to state boundaries and governed by state regulations, explain and illustrate what you think will happen over time to market price and output (label the new market output Q_1). Also explain and illustrate the optimal output (label it q_1) for the representative farmer and what her economic profits will be in long-run equilibrium.



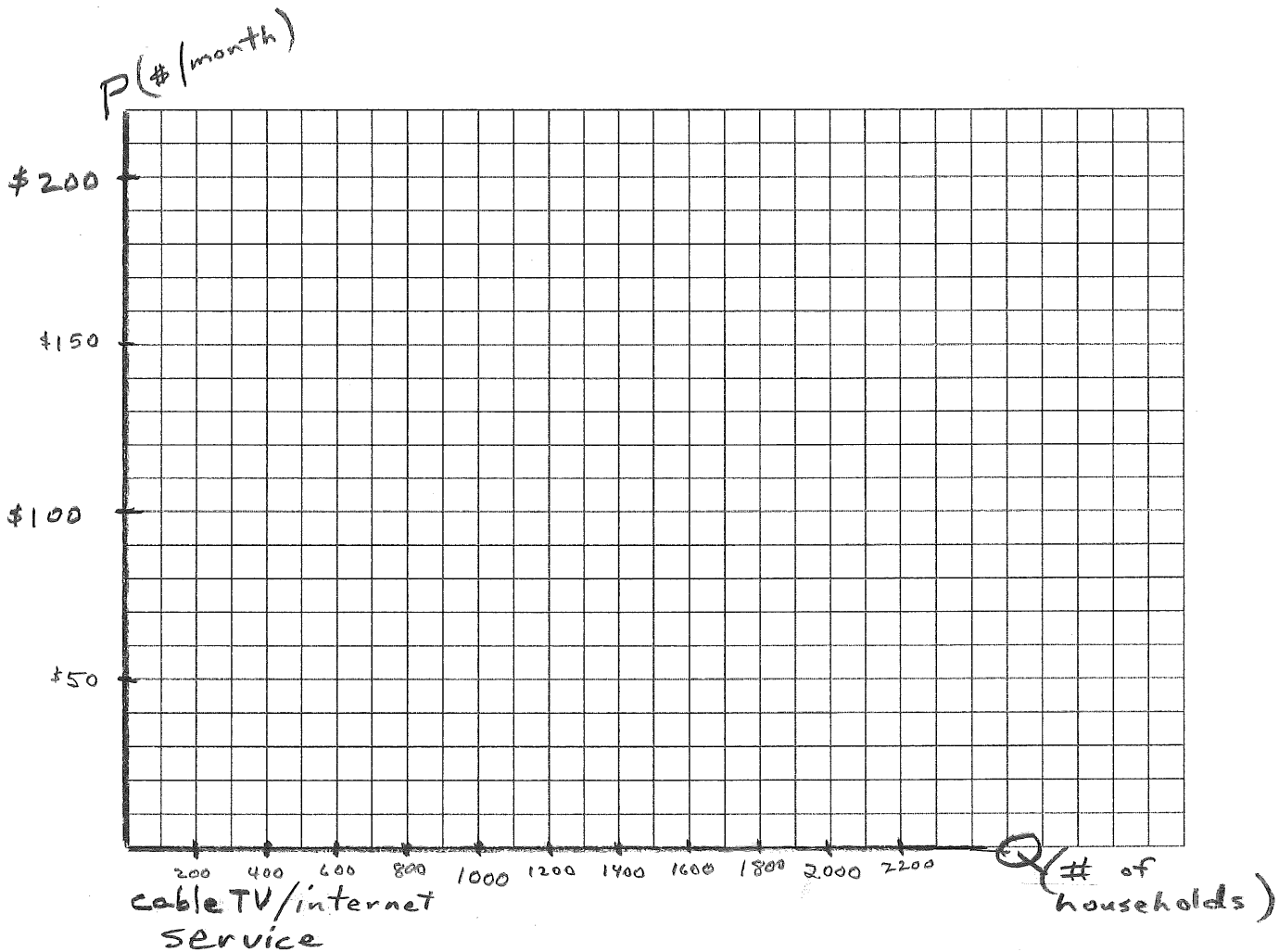
- (c) Now, suppose that a friend who grows marijuana in Oregon asks you to advise her on what the future holds if Congress legalizes recreational marijuana for the entire country, eliminating state regulations and controls. At the farm level, legalization would mean that marijuana would become a commodity that could be produced anywhere in the U.S. and shipped across state lines. Based on your experience with tobacco and hemp production in other states like Kentucky and North Carolina, you know that larger scale mechanical production can reduce the costs of growing crops like tobacco, hemp, and marijuana. In words, but referencing your diagrams, explain what you think will happen as this new national market evolves. And explain to your friend the ramifications for Oregon growers like herself.

4. (15 pts.) Your sister-in-law has spent several decades as an accountant, specializing in auditing small retail establishments. She has developed a good sense of the accounting and the economic costs of operating a variety of different types of such businesses. She decides to make a career change and try out her entrepreneurial instincts. She informs you of her intent to open a boutique shop in Lexington specializing in unique and expensive women's clothing and accessories. While she knows about costs, she isn't so confident about making economic forecasts. She asks for your thoughts on the expected long-run profitability of her idea.
- (a) What type of market structure is she entering into? Explain.

- (b) She is good with graphs, and has sketched in the diagram below her understanding of the per unit costs of operating such a boutique, but she needs your MBA knowledge to help her assess demand, pricing, and output. Explain and illustrate your assessment of the long-run profitability of such a venture.



5. (15 pts.) You are mayor of a remote community in southeastern West Virginia. Your town has no connection to the outside world, except for copper telephone lines, over-the-air television signals, and some individually owned satellite dishes. In your travels you have noticed that other towns like yours have allowed a cable TV/internet provider, Outtasight Cable and Internet, to build infrastructure and sell broadband TV and internet services to local residents. After doing some marketing research, you determine that demand in your town for such services is given by the following algebraic equation: $Q = 2000 - 10P$, where Q is the number of households who subscribe and P is the price per month in dollars for cable TV and internet service. Outtasight's cost structure is very simple: $MC = AC = \$40$ per month per household served. If you grant a monopoly franchise to Outtasight, what price do you anticipate that they will charge per month, how many households will subscribe, and what will their profits be each month? Illustrate in the diagram below and explain.



6. (10 pts.) While reading the Wall Street Journal, and before city council has granted any licenses, you learn that a new fiber-optic cable startup company is offering the same services as traditional copper-wire cable companies supply. If both companies are granted licenses to operate in your town, they would play the following simultaneous-move game, wherein each would have to choose whether to build infrastructure capable of providing high quality (500 mbps internet speed, 100 cable channels, telephone), medium quality (200 mbps, 70 channels, telephone), or low quality (100 mbps, 40 channels, no telephone) service to customers who sign up with them. They would obviously price their services according to the quality they provide. Their economic profits from each strategy pair possibility is given in the following payoff matrix, where the first number in each cell represents the economic profit (in thousands of dollars per month) to Outtasight and the second number represents the profit to NetroMet:

		NetroMet Fiber Cable and Internet		
		High Quality	Medium Quality	Low Quality
Outtasight Cable and Internet	High Quality	32 , 32	20 , 36	16 , 32
	Medium Quality	36 , 20	24 , 24	12 , 16
	Low Quality	32 , 16	16 , 12	0 , 0

Solve the game using solution strategies we developed in class. Carefully explain each step you use in arriving at your answer.

7. (10 pts.) Suppose it would be a year before NetroMet would be ready to build infrastructure and start laying fiber-optic cable to households in your town. People are pressing for connectivity, so city council asks you how things would turn out if Outtasight were permitted to proceed with their infrastructure construction immediately, and then NetroMet would be allowed to come along a year from now and make their infrastructure investment decision, given what Outtasight had already built. Drawing a game tree, explain to city council how you think this sequential-move game would turn out. Carefully explain your reasoning.