Practice Final

Econ 100A

PART I

5 T/F – Your explanations must include 2-3 sentences and a graph.

1. In the labor supply model, a person will always work overtime hours if s/he is paid more.

   False, that depends on preferences, not how much wage is.

2. The more elastic the demand curve, the smaller the markup a monopolist is able to charge.

   True.

3. The monopolistic competitive firm has market power both in the short and long run. **True,**

   P>MC both in SR and LR.

4. When the demand curve is perfectly inelastic consumer incidence is 100%. **True.**

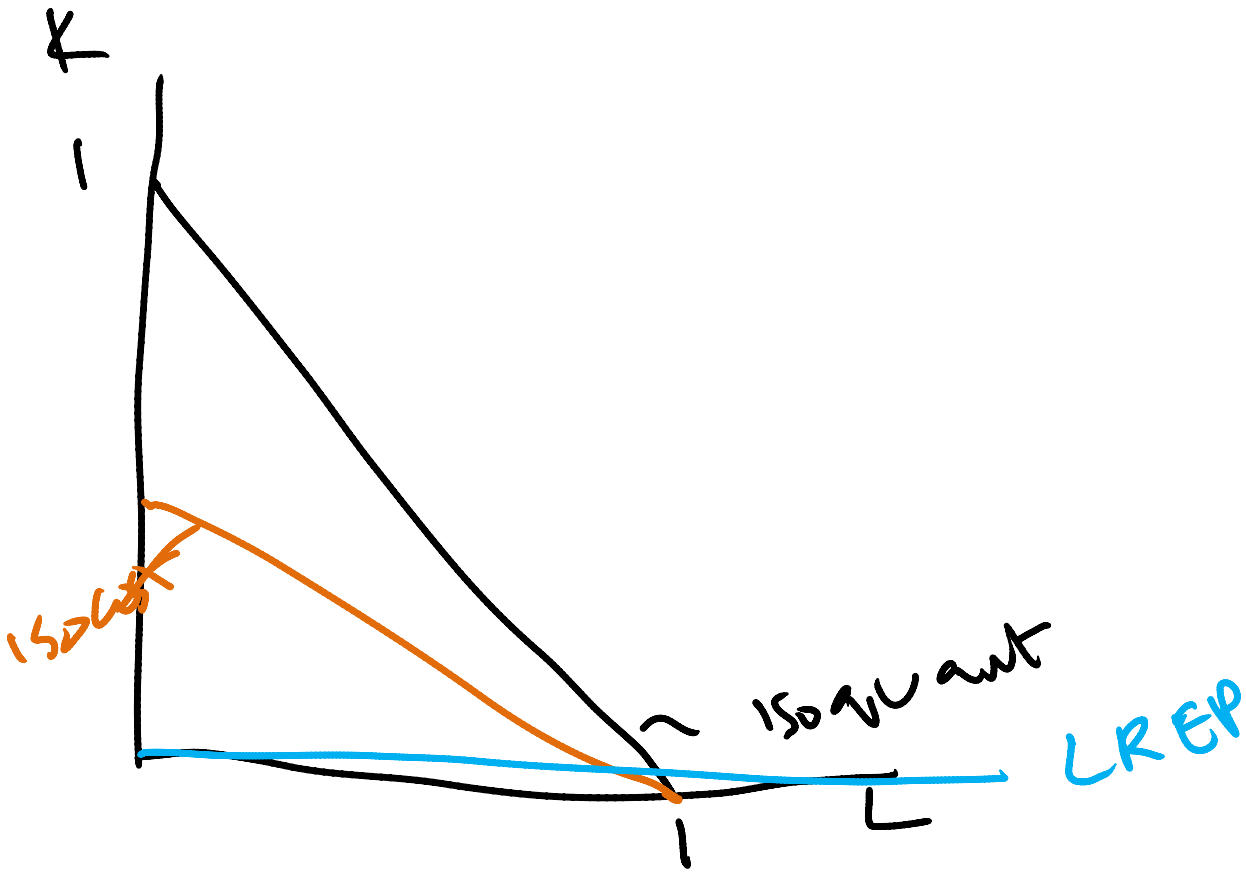
5. If the price-consumption curve is backward bending, the good must be a Giffen good. **True.**

PART II - 6 Short-Answer Questions

1. Show graphically and explain why producing the competitive quantity maximizes welfare.

   You needed to show that both producing more or less than the C.E. results in DWL.

2. Widgets can be produced with either 1 unit of capital or 1 unit of labor. The price of labor is $1 and the price of capital is $2. Draw an isocost and an isoquant that reflect this scenario. Draw the LR expansion path of Widget production.



3. State the conditions that make a cartel successful.

a. Inelastic demand

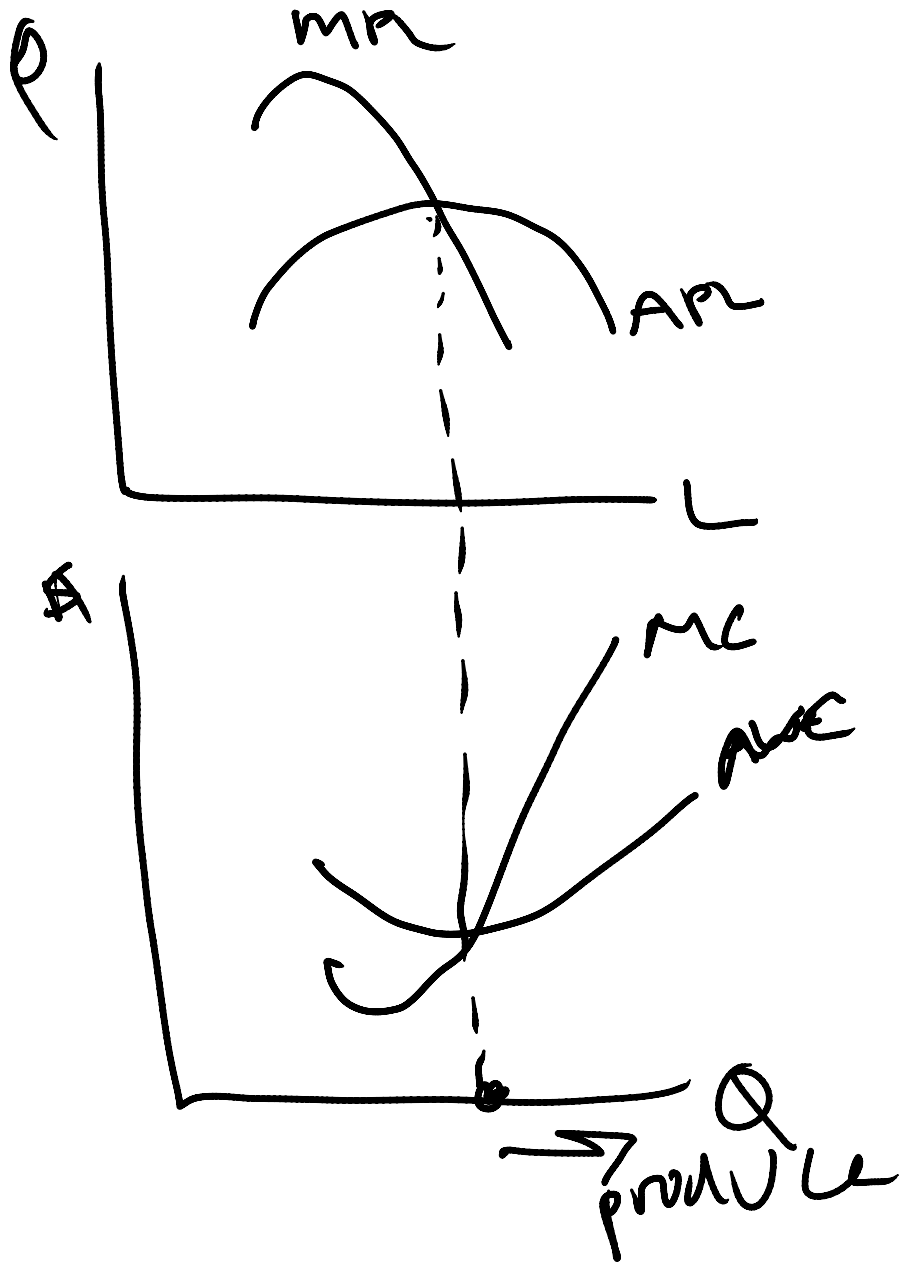
b. Cartel controls most of world production

c. A successful cartel requires high degree of agreement and coordination

d. If the threat of returning to competitive prices is credible and large then cartel is more likely to succeed.

4. Explain why firms will not produce when marginal productivity of labor is higher than average productivity of labor. Support your explanation with a graph.

If MPL>APL that means that AVC>MC, which we showed is an area where firms will not produce.



5. i. Find the pure strategy and mixed strategy Nash Equilibriua in the following game.

Pure: Firm 1 enters, Firm 2 does not OR firm 1 does not enter, firm 2 enters.

Mixed: Firm 1 enters with probability 2/3, firm 2 enters with probability 4/5.

For firm 1: If firm 2 enters with probability θ, then:

$-1*\theta + 4(1-\theta) = 0 \rightarrow \theta = 4/5$

For firm 2: if firm 1 enters with probability δ:

$-2\delta + 4(1-\delta) = 0 \rightarrow \delta = 2/3$

ii. A corrupt city official wants to make sure that firm 1 enters the market, but has to offer a non-specific subsidy to both firms. What would be the size of such subsidy? Change the payoffs according to your answer and find the Nash equilibrium.

Any amount that increases the payoff of firm 1 from the (enter,enter) equilibrium to bigger than 0, but leaves the payoff for firm 2 negative. The example uses a subsidy of 1.5. The Nash equilibrium is firm 1 enters, firm 2 does not.

Firm 2

Firm 1		Enter	Don't Enter
	Enter	-2 -0.5 -1 0.5	0 4 5.5
	Don't Enter	4 5.5 0	0 0

6. Show mathematically that a market characterized with Cournot firms where one firm faces double the costs of another, will result in less quantity produced than a Cournot equilibrium with firms facing the same MC and (you can assume linear demand curve with slope of -1). Give an economic explanation for this result.

You could use the example we did in class and have firm's 1 MC = 3 and firm 2 MC = 6. If this is the case then

Firm 1: $30-2Q_1 - Q_2 = 3$ **Firm 2: $30 - 2Q_2 - Q_1 = 6$**

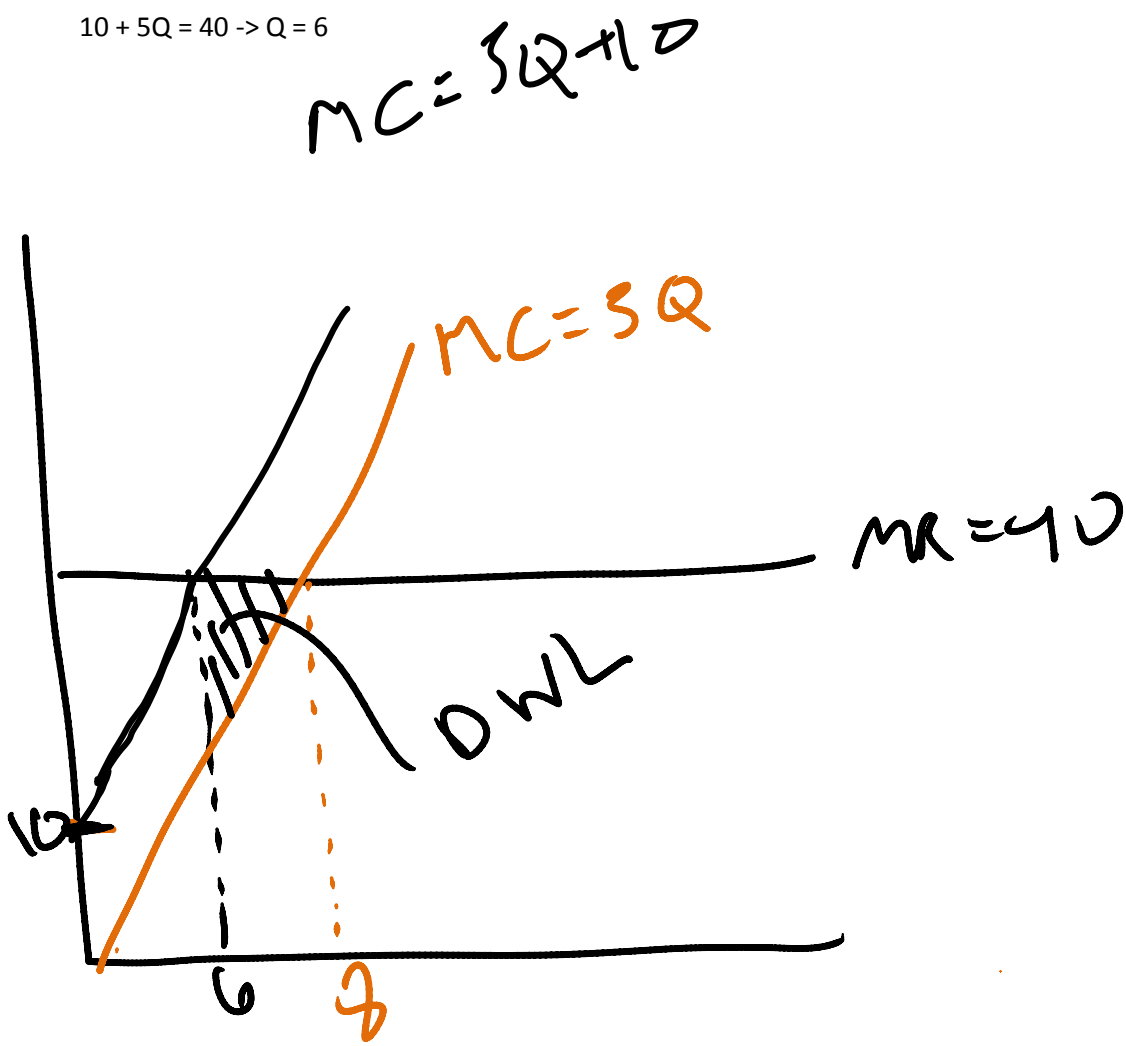
Solving for this you get that Q1 = 10 and Q2 = 7. Total market production is 17, which is less than the Cournot equilibrium we found. The reason is that the non-identical costs give one firm more market power – it is closer to monopoly than Cournot firms with identical costs.

PART III – 2 Long-Answer Questions

1. A beekeeper has MC = 10 +5Q, where Q is the number of beehives he maintains. Each beehive produces a constant revenue of $40.

   a. Find the quantity of beehives the beekeeper will maintain and show your results graphically.

   10 + 5Q = 40 -> Q = 6



Next to the beekeeper there is an apple orchard. The orchard's owner enjoys from the benefit of bee pollination, where each beehive saves him $10 in artificial pollination costs.

b. What is the social optimal quantity of beehives? Show it on your graph.

   5Q = 40 -> Q = 8

c. Mark the deadweight loss in your graph from producing at the competitive equilibrium. Calculate the value of DWL.

   DWL = 0.5*2*10 = 10

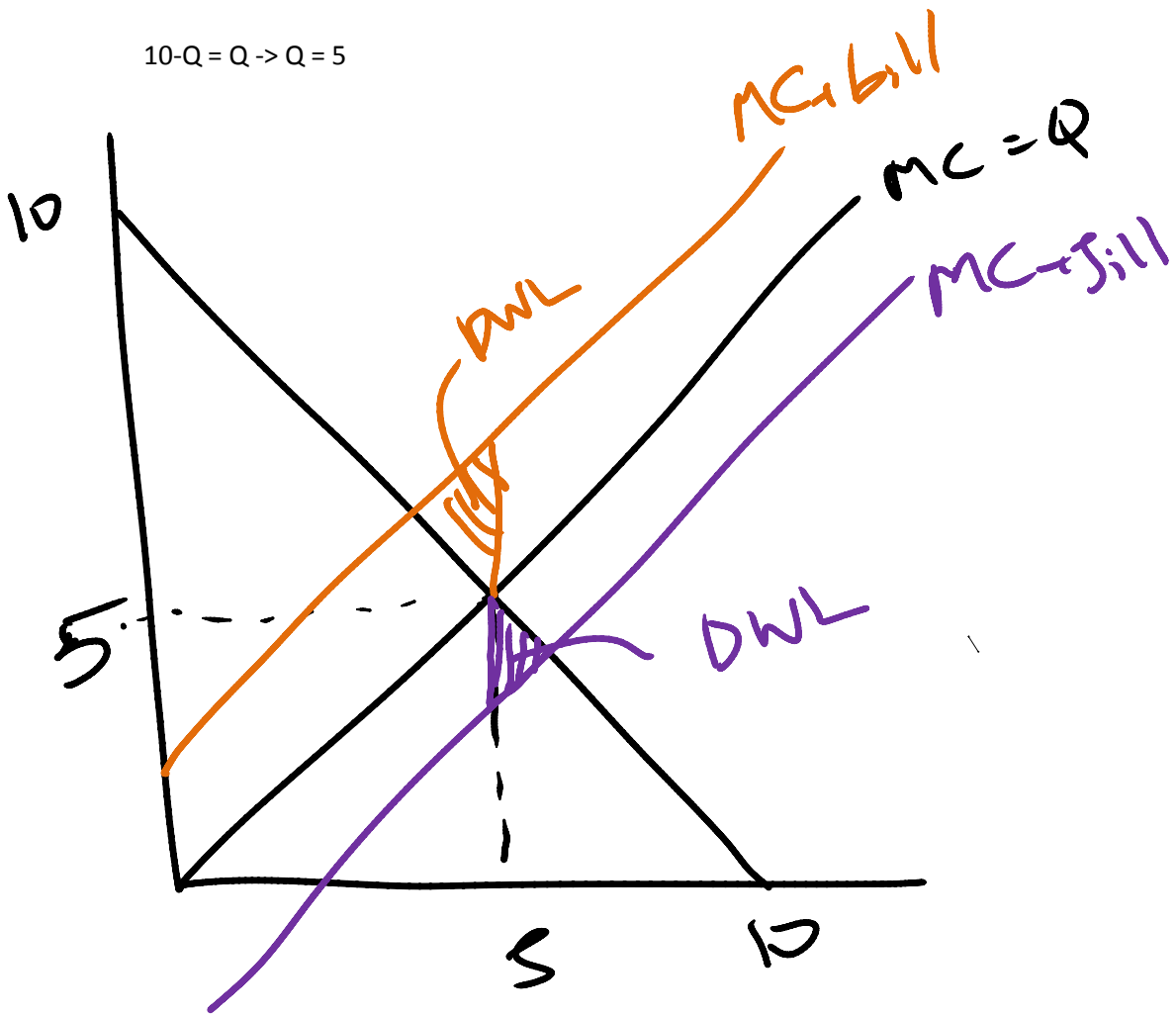
d. If you were the orchard's owner, how would you entice the beekeeper to produce the social optimal quantity?

   You would pay him up to $10 per hive.

2. Jill, Bill and Phil live in a 3-apartment complex. Phil loves to listen to Black-Eyed Peas very loudly. Jill can't get enough of Black-Eyed Peas music and Bill cannot stand it.

   a. Assume that Phil's MC is Q, where Q is the hours Phil listens to Black-Eyed Peas and let Phil's demand for music be P = 10 – Q. How many hours of music will Phil listen to? Graph this scenario.

      10-Q = Q -> Q = 5



   b. Let Jill's benefit from an hour of music be $2. What would be social marginal cost? Add it to your graph.

Social MC = Q - 2

c. How many hours of music would Phil listen to if he took Jill's benefit into account? Mark on your graph the deadweight loss from Phil's private consumption.

   10 – Q = Q-2 -> Q = 6

d. Let Bill's cost from an hour of music be $2. In a new graph, draw Phil's private cost and the social marginal cost, taking Bill's costs into account.

   Social MC = Q + 2

e. How many hours of music would Phil listen to if he took Bill's costs into account? Mark on your graph the deadweight loss from Phil's private consumption.

   10-Q = Q-2 -> Q = 4

f. If you were a regulator trying to fix the externality issues created by Phil's music listening habits, what would you?

   You should not intervene in the market since the negative externality imposed on Bill is offset by the positive externality experienced by Jill.