Final Exam

1. (20 points) The weekly demand for beer in Maltown is described by: $P = 1000 – 2Q$, where Q is measured as the number of six-packs consumed each week and P is the price of a six-pack. The marginal cost of producing a six-pack is constant at $8 and beer producers have no fixed costs.

   a. What is the equilibrium price and output if the Maltown beer market is perfectly competitive? What will the total amount of producer surplus in the competitive equilibrium? What will be the total amount of consumer surplus?

   b. What is the equilibrium price and output if the Maltown beer market is monopolized and the monopolist charges a single, uniform price to all consumers? What will be the value of producer surplus in this case? What will be the value of consumer surplus?

   c. What will be the equilibrium output if the Maltown beer market is monopolized but the monopolist can perfectly price discriminate? What will be the value of producer surplus in this case? What will be the value of consumer surplus?

2. (20 points) The Tower of London is a store of great treasure. It has been the seat of British government as well as the site of infamous political intrigue. It has housed notorious traitors, virtuous members of court, lions, bears, and ravens. Most famously perhaps, it has been and continues to be the repository of Britain's Crown Jewels. Almost as well-known as Her Majesty's Tower are the Yeoman Warders often called the Beefeaters who guard the fortress. It is an honor and a great privilege to serve as a Yeoman Warder. Historically, it was also a great opportunity to enrich oneself at the public expense. It seems that a few hundred years ago, when the Tower also served as the store for much of Britain's gold, many of the guards could not resist the temptation to steal the occasional gold coin out of the treasury. Of course, if a guard was caught stealing, the guard was summarily dismissed.   It seemed impossible though to watch the Beefeaters constantly and make sure that they never took anything. To do that would require hiring a second layer of guards and that would be expensive. Historians of the Tower have noted that shortly after this problem emerged, the Crown raised the basic pay of a Yeoman Warder to £7 per year, notably higher then the going market wage rate at that time of £5 per year. Historians have also noted that to get a job as a Yeoman Warder it was not enough to apply. One also had to pay a big, up-front fee, i.e., any successful applicant had to make a one-time payment right at the start if they were actually to be hired.

   Comment on these developments. Why do you think that the British government decided to pay above market wages to its Beefeaters? Why do you think people paid to obtain Beefeater jobs? What other methods do you think the British monarchy might have used to achieve its objectives?

3. (20 points) In nearly each of the last 20 years, the faculty at Sloneybrook University has reviewed the course requirements that all of their students must fulfill to graduate. Such reviews are initiated in the Committee on Academic Policy (CAP), which is comprised of representatives from each of the academic departments. Proposed reforms typically include dropping some classes from the required list and adding in others. Any reform that is proposed by the CAP is then voted on by the entire Sloneybrook faculty. Yet despite this continuing effort, no major reform proposal has been adopted with the result that the set of courses required for the Sloneybrook degree has not changed in over two decades. In chronicling this failure, outsiders have noted the following features of the Sloneybrook decision-making process: a) departmental budgets and/or salaries are related to the number of students enrolled in departmental courses; b) there are a large number of required courses; c) faculty are risk averse; and d) the governance process is very inconsistent—the reform proposal that wins in one committee is later defeated in another committee or in a general faculty vote.

   Use these observations and what you know about group decision-making to analyze briefly the failure of the Sloneybrook faculty to reform its graduation course requirements.

4. (20 points) Imagine that Dry Gulch has two potential water suppliers. One is Northern Springs whose water is naturally carbonated but also somewhat "hard." The other is Southern Pellegrino whose water is crystal clear but not carbonated. The marketing department of each firm has worked out the following profit matrix depending on the price per 2 gallon container charged by each firm. Northern Spring's profits are shown as the first entry in each cell, e.g., if Northern Springs sets a price of 4 and Southern Pellegrino sets a price of 3, Northern Springs nets $25,000 in profits and Southern Pellegrino nets $30,000.

Southern Pelligrino's Price is:

		3	4	5	6
	3	**24,24**	**30,25**	**36,20**	**42,12**
	4	**25,30**	**32,32**	**41,30**	**48,24**
Northern Springs' Price Is:	5	**20,36**	**30,41**	**40,40**	**50,36**
	6	**12,42**	**24,48**	**36,50**	**48,48**

  a. Suppose that the two firms set their prices simultaneously. What is the (Nash) equilibrium?

  b. Suppose that Northern Springs must set its price first, and stick with it, while Southern Pellegrino then reacts as best it can to the choice of Northern Springs. What is the price equilibrium in this case?

  c. Does going first help or hurt Northern Springs?

5. (20 points) Consider the following data on the relative price-cost markups for selected cars in different European Countries in 1997. Here, the markup is measured as the percentage of the price by which the price exceeds an estimate of production cost, i.e., as the Lerner Index. That is, the higher is the markup, the greater is the price above marginal cost.

Model	Italy	UK	France	Germany	Belgium
Fiat Uno (Italy)	21.7	8.7	8.7	9.8	7.6
Nissan Micra (Italy)	36.1	12.5	23.1	8.9	8.1
Ford Escort (UK)	8.9	11.5	9.5	8.9	8.5
Peugeot 405 (France)	9.9	11.6	13.4	10.2	9.5
Mercedes 190 (Germany)	15.6	12.3	14.4	17.2	14.3

  Comment on these findings. What patterns do you discern? What economic reasoning might explain these patterns?