EC155a: Problem set #4
Due on Monday, December 11 by 9:00 AM at Professor Isham's office

Question 1

The following table shows a partial set of costs for a firm.

a. Fill in the rest of the table and graph the results for MC, AFC, AVC and ATC.
b. Explain why the four curves in your graph will always have the shapes that they do under short-run production.
c. If this good sells for $2, what is the profit-maximizing level of production? If nothing changes for this company, will it be able to stay in business in the long run? Why or why not?

Q	FC	VC	TC	MC	AFC	AVC	ATC
0		0		-	-	-	-
2		4					
4							4
6			20				
8						2	
10		24			1		
12		34					
14			56				

Question 2

The Micro Cider Company (MCC) makes juice out of apples supplied to it by Cornwall Orchards, which pays MCC $10 for each case of juice. MCC's only factors of production are the laborers they employ and a small building with a cider press. The number of cases per day it produces depends on the number of employee-hours per day, as show below.

Cases/day	Employee-hours/day
0	0
5	1

10	2
15	4
20	7
25	11
30	16
35	22

a. If the wage is $15 per hour and MCC's daily fixed cost for the cider press is $20 (as a loan payment to the bank), what is the profit-maximizing quantity of cases per day?

b. What would be the profit-maximizing number of cases if the firm's fixed cost were not $20 per day but only $5?

c. How would MCC's profit-maximizing level of output be affected if the government imposed a tax of $10 per day on the company, regardless of its production levels?

d. What would MCC's profit-maximizing level of output be if the government imposed a tax of $2 per case? Do these two taxes have different effects? If so, why? If not, why not?

Question 3

Imagine that a monopolist faces the following demand curve for its product (columns 1 and 2) and total cost of production (column 3).

Quantity	Price	Total cost
0	$15	$8
1	$14	$11
2	$13	$16
3	$12	$26
4	$11	$39
5	$10	$57

Calculate (a) the profit-maximizing level of output and (b) the profit for this monopolist. In a

carefully labelled graph, illustrate the equilibrium in this market. Would society be better off if this were a perfectly competitive market? Why or why not? Use your graph to defend your answers.

Question 4

a) Explain the ‘flower pot’ rule and illustrate the effect that it has on cost curves.
b) For a monopolist, why is the marginal revenue curve always lower than the demand curve for its product?
c) Using a 2 x 2 game theory model, illustrate why the decision to carry a plate out of Proctor - and not return it! - resembles ‘the prisoner’s dilemma.’ Identify the social optimum and the Nash equilibrium.