

Problem Set #2
Due September 28, 1998

1. In the village of Cheng Kin, province of Yu Wing-lun, a thriving market has long existed for Ho Ho-shuens, known colloquially as hohos because they make people feel so happy. Hohos are manufactured from the finest raw materials in a large number of local factories, and it is well-established that the supply curve for hohos, accurately reflecting their marginal cost, is given by the following equation:

$$P = 120 + 4Q$$

where Q is the quantity of hohos in thousands, and P is their price in local currency, tinging per hoho (⌚/hh.). Demand for hohos has been stable for many years, given by the equation

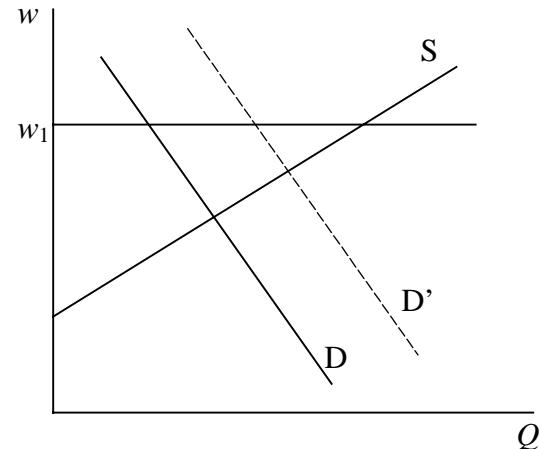
$$P = 930 - 0.5Q$$

Price, as you should verify, has been ⌚840 per hh.

The mayor of Cheng Kin, Kin-chung Clinton, has just learned that hohos can be used effectively to enhance productivity of government employees, and he proposes to have the government buy 20,000 of them.

- a) What percentage of current hoho production would this government order be?
- b) What would be the new equilibrium price of hohos if this order were added to the current market? How much, therefore, will the 20,000 hohos cost the government?
- c) Calculate the effects of this purchase on private consumer and producer surplus in the hoho market.
- d) What is the net social cost of this policy?

2. The figure at the right shows, as solid lines, the initial supply and demand for labor and a legally enforced minimum wage, w_1 . The demand curve then shifts to the right, to D' , as a result of increased employment by government. Assuming that available jobs are allocated randomly among those who want to work at wage w_1 , use the figure to identify the following:



- a) The quantity of labor employed before and after the increase in government demand for labor.
 - b) The effect of the increased demand on the welfare of suppliers and demanders of labor.
 - c) Is it possible that the increase in government employment is socially beneficial even if there is no social value to what they do in their new jobs? If so, identify the gain to society. If not, determine how productive they must be in their new jobs in order for this policy to be beneficial for society as a whole.
3. Calculate the present discounted value of the projects listed in the table below, which reports for each of four projects, a, b, c, and d, the relevant interest rate, r , and the benefits (positive) and costs (negative) in the present ($t=0$), and in each of t years from the present.

Project	Interest rate	Benefits (+) and Costs (-) in present (0) and future years, $t=$							
		0	1	2	3	4...9	10	11	12...∞
a)	5%	-700	300	400					
b)	3%	5	-5	-5	-5	-5	-5		
c)	7%	-200	14	14	14	14	14	14	14
d)	10%						100	100	