Problem set 3, due Tuesday 10/22/13
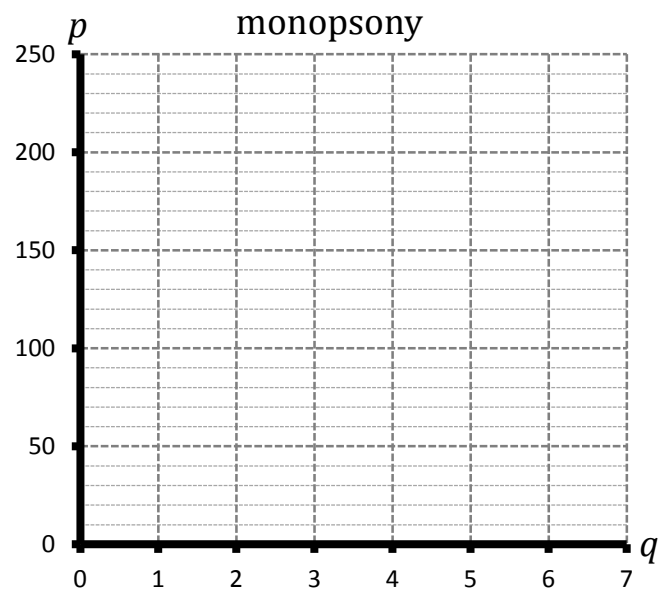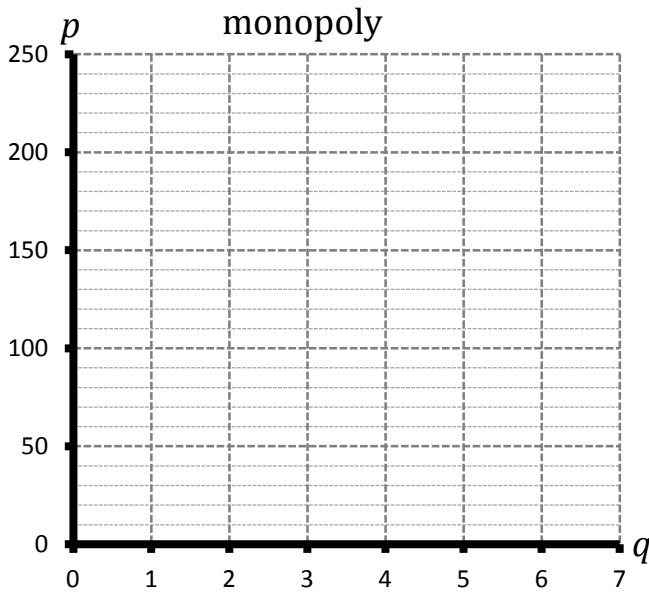
1. Monopoly and monopsony, discrete. Let q be the quantity of some discrete good, like some type of gemstone or whatever. In this problem, you will explore two different scenarios. (1) Monopoly: The case in which there is only one seller, and buyers compete with one another. (2) Monopsony: The case in which there is only one buyer, and the sellers compete with one another. In both scenarios, assume that there is only one price. Suppose that the MB column gives the marginal benefit from the next gemstone to the consumer(s), and that the MC column gives the marginal cost to the seller(s) of producing the next gemstone.

a) Suppose that there is one seller, while buyers behave competitively. Fill in the R (revenue), MR (marginal revenue), TC (total cost), and PS (producer surplus) columns. You should see two ways of finding the monopolist's optimal quantity, which is _____, and optimal price, which is _____. In this case, consumer surplus is _____, producer surplus is _____, total economic surplus is _____, and deadweight loss is _____.

b) Suppose on the other hand that there is one buyer, while sellers behave competitively. Fill in the E (expenditure), ME (marginal expenditure), TB (total benefit), and CS (consumer surplus) columns. You should see two ways of finding the monosonist's optimal quantity, which is _____, and optimal price, which is _____. In this case, consumer surplus is _____, producer surplus is _____, total economic surplus is _____, and deadweight loss is _____.

|	Setup			Case 1: monopoly					Case 2: monopsony			
q	MB	MC		R	MR	TC	PS		E	ME	TB	CS
1	220	10										
2	200	30										
3	180	50										
4	160	70										
5	140	90										
6	120	110										
7	100	130										

c) Use the blank graphs on the next page to illustrate the two situations above. On the monopoly graph, draw lines representing MB, MC, and MR, and shade areas representing CS, PS, and DWL. On the monopsony graph, draw lines representing MB, MC, and ME, shade areas representing CS, PS, and DWL.

p **monopoly**

q

p **monopsony**

q

2. Monopoly and monopsony, continuous. Let q be the quantity of some continuous good, like peanut butter or whatever. Again, we will consider both the monopoly and monopsony cases, given that marginal benefit and marginal cost are given by $MB = 120 - 2q$ and $MC = q$.

a) Suppose that there is one seller, while buyers behave competitively. Find the price, quantity, consumer surplus, producer surplus, and deadweight loss in the equilibrium. On the monopoly graph below, draw the MB, MC, and MR curves, and shade in the areas representing consumer surplus, producer surplus, and deadweight loss.

b) Suppose on the other hand that there is one buyer, while sellers behave competitively. Find the price, quantity, consumer surplus, producer surplus, and deadweight loss in the equilibrium. On the monopoly graph below, draw the MB, MC, and ME curves, and shade in the areas representing consumer surplus, producer surplus, and deadweight loss.

p **monopoly**

q

p **monopsony**

q
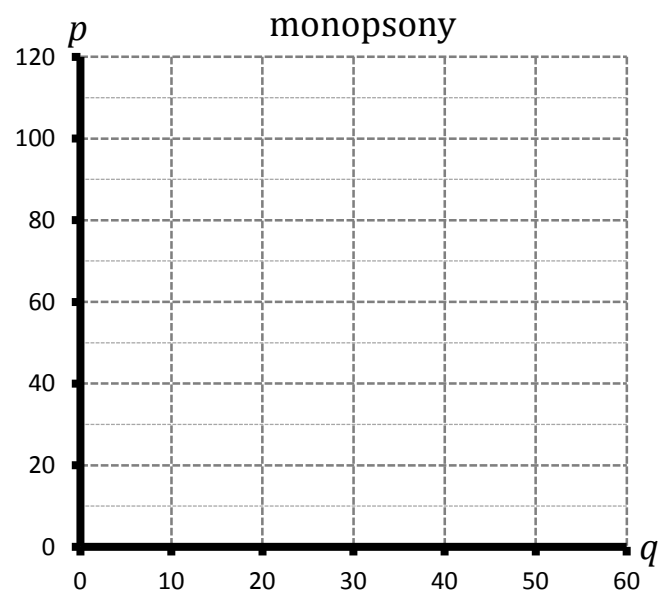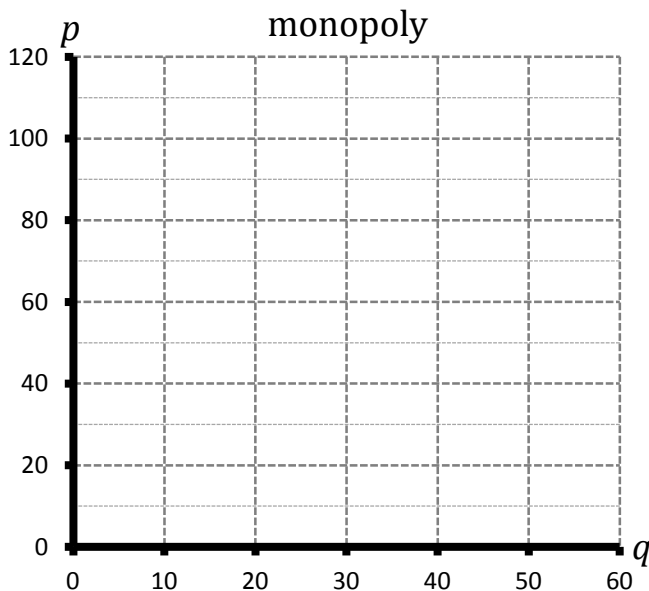
3. Reflection questions

a) What is the connection between a worker facing some cost of changing jobs, and their employer facing an upward-sloping supply of labor curve?

b) Why does the marginal expense of labor exceed the wage rate for a firm facing an upward-sloping labor supply curve?

c) Under what circumstances can a mandated wage simultaneously increase wages, employment, and economic efficiency?

d) Why do the labor market frictions discussed in chapter 5 provide a partial explanation for the observation that a worker's wage tends to be positively associated with both their time at their current job and their overall time in the labor market?

e) In what ways do the existence of quasi-fixed costs of hiring workers complicate the simple leisure/consumption tradeoff that we developed in the previous unit?