Problem set 4, due Monday, March 9th, 2015

1. I invented my own super hero character, and so I have the monopoly on making action figures based on said character. I must sell all of the figures at the same price, and I face a demand schedule that is defined by the marginal benefit schedule given in the second column below. Each action figure costs $10 to manufacture.

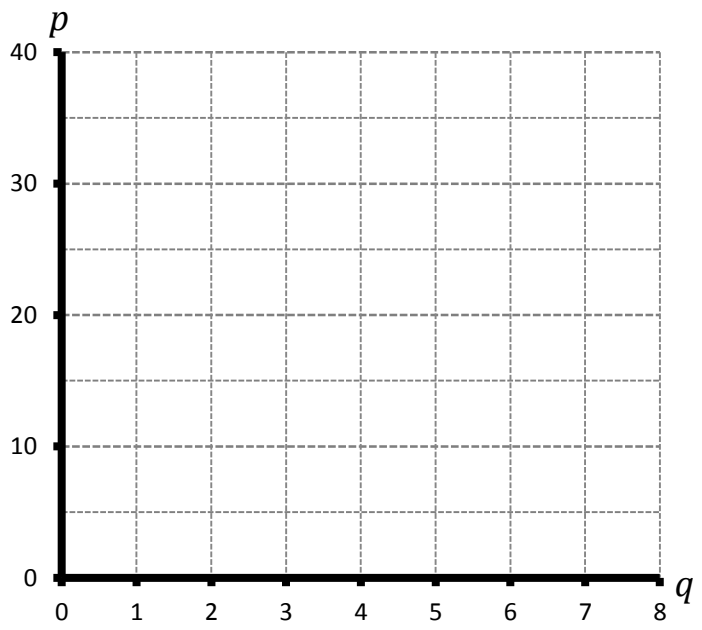
a) Fill in the columns for total revenue (R) and marginal revenue (MR), total cost (C), and producer surplus (PS).

b) To maximize my profit, I should sell a quantity of _____ action figures, at a price of _____. At this quantity and price, consumer surplus will be _____. When added to my producer surplus of _____, this gives a total economic surplus of _____.

c) If I lost my copyright, so that anyone could make action figures based on my character for a cost of $10 each, the equilibrium price would be _____, the equilibrium quantity would be _____, consumer surplus would be _____, producer surplus would be _____, and total economic surplus would be _____.

d) Draw the marginal benefit (MB), marginal revenue (MR), and marginal cost (MC) functions in the blank graph below. Shade in the area corresponding to the deadweight loss caused by my being a monopolist rather than a group of perfectly competitive firms.

Q	MB	R	MR	C	PS
1	35				
2	30				
3	25				
4	20				
5	15				
6	10				
7	5				

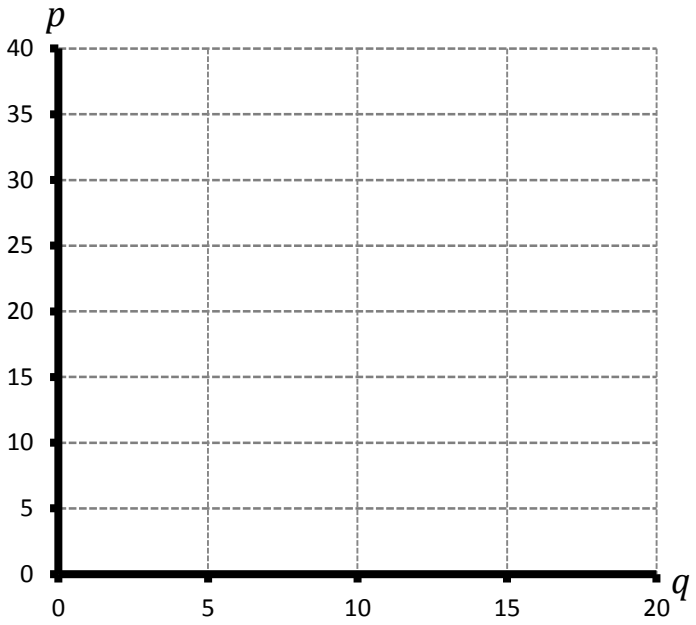


2. In the market for silly putty, cost and benefit are defined by functions:

$$MB = 36 - 3q \qquad MC = 8 + q$$

a) If the industry is perfectly competitive, then the equilibrium quantity will be _____, the equilibrium price will be _____, consumer surplus will be _____, producer surplus will be _____, and total economic surplus will be _____.

b) If supply is controlled by a monopolist with marginal revenue $MR = 36 - 6Q$, then equilibrium quantity will be _____, the equilibrium price will be _____, consumer surplus will be _____, producer surplus will be _____, and total economic surplus will be _____.



c) Draw and label the *MB* curve, the *MC* curve, and the *MR* curve. Show both the competitive (optimal) quantity and price, and the monopolist's quantity and price. Shade in the area corresponding to the deadweight loss of monopolization. What is the deadweight loss? _____