

THIRD TEST. ECON 100D, FALL 2014. NAME: _____

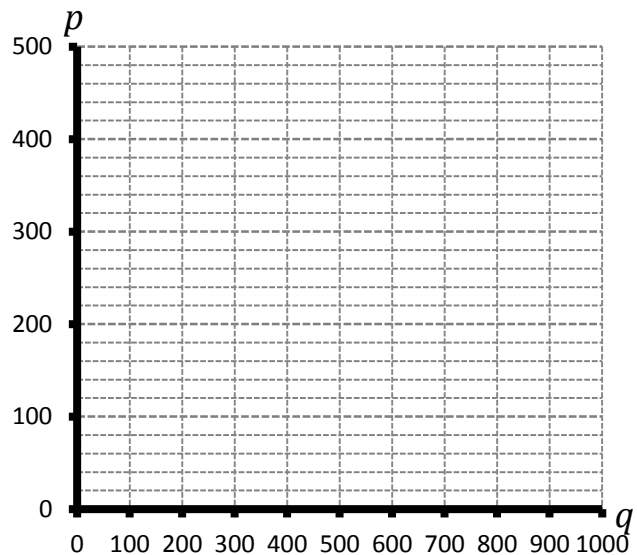
Fill in the blanks, and answer in the spaces provided. Show your work.

1. Monopoly. In the market for kombucha, cost and benefit are defined by the marginal benefit and marginal cost functions $MB = 500 - \frac{1}{2}q$ and $MC = 200 + \frac{1}{4}q$.

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 $MR = 500 - q$, then the equilibrium quantity will be _____, the equilibrium price will be _____, consumer surplus (CS) will be _____, producer surplus (PS) will be _____, total economic surplus (TES) will be _____, and deadweight loss (DWL) will be _____.

c) On the graph to the right, 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. For the case with the monopoly, use different shading to indicate CS , PS , and DWL .



d) Explain (in clear terms, as if to someone not in this class) why the monopolist's marginal revenue curve is below the marginal benefit (or demand) curve.

2. Firm entry and exit. Suppose that every firm in a particular industry (which is perfectly competitive) has the cost function $C(q) = 20q + \frac{1}{40}q^2 + 10$, and thus the marginal cost function $MC(q) = 20 + \frac{1}{20}q$, where q is the quantity of output it produces. Market demand is given by the function $Q_d(p) = 2700 - 100p$. Let n be the number of firms.

a) Find the supply function of each firm, $q_s(p)$, and use this to find the market supply function, $Q_s(p) = n \cdot q_s(p)$.

For parts b-d, suppose that in the short run there are 2 firms in the industry.

b) The short run market equilibrium price is _____. At this price, each firm produces $q =$ _____ units, and all the firms together produce $Q =$ _____ units.

c) Each firm has revenue $R =$ _____, cost $C =$ _____, and profit $\pi =$ _____.

d) Do firms want to enter or exit?

In parts e-g, we consider the long run equilibrium, in which firms do not want to enter or exit.

e) Find each firm's average cost function, $AC(q)$.

f) In the long run equilibrium, the price is $\tilde{p} =$ _____, and each firm will produce $\tilde{q} =$ _____ units of output.

g) Therefore, the number of firms in the long run equilibrium is $n^* =$ _____.

3. Supply and demand, with trade. Suppose that domestic demand and supply of bananas in Stansylvania can be represented by the following marginal benefit and marginal cost functions: $MB = 100 - \frac{1}{20}q$, and $MC = 10 + \frac{1}{10}q$ (where q gives the quantity of bananas consumed or produced). Stansylvania is such a small country that it can have no measurable effect on the worldwide market price of bananas, which is 30.

a) Find Stansylvania's equilibrium quantity, price, consumer surplus, producer surplus, and total economic surplus if its government allows no imports at all.

$$q = \underline{\hspace{2cm}} \quad p = \underline{\hspace{2cm}} \quad CS = \underline{\hspace{2cm}} \quad PS = \underline{\hspace{2cm}} \quad TES = \underline{\hspace{2cm}}$$

b) Find Stansylvania's equilibrium quantity demanded, quantity supplied, quantity imported, consumer surplus, producer surplus, and total economic surplus if its government allows bananas to be imported without restriction.

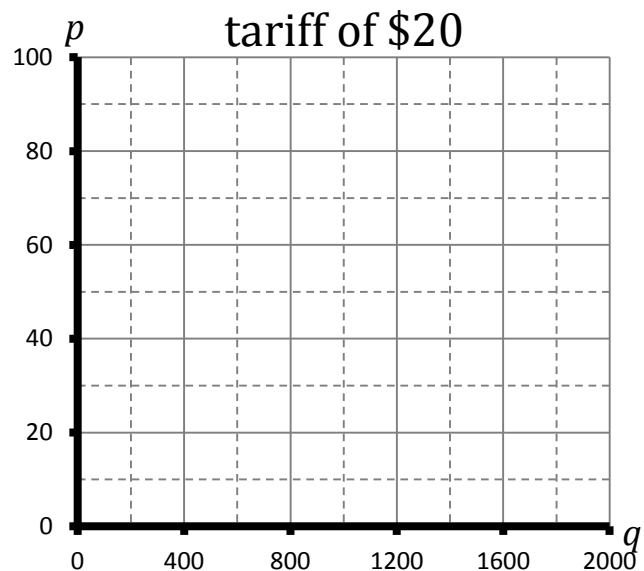
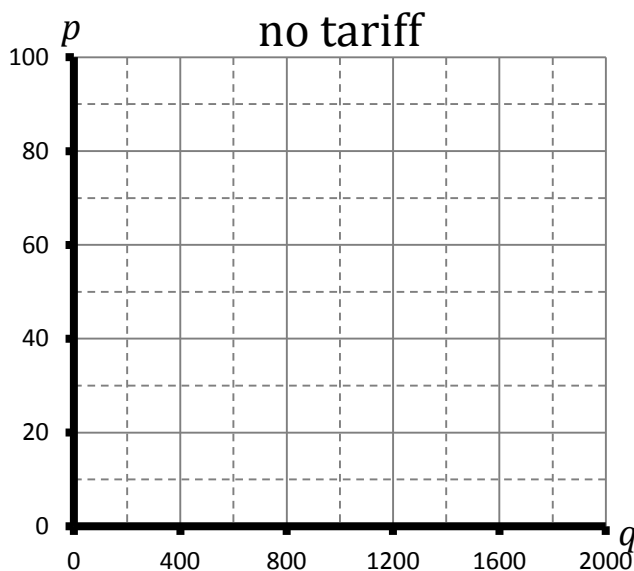
$$q_d = \underline{\hspace{2cm}} \quad q_s = \underline{\hspace{2cm}} \quad q_i = \underline{\hspace{2cm}} \quad CS = \underline{\hspace{2cm}} \quad PS = \underline{\hspace{2cm}} \quad TES = \underline{\hspace{2cm}}$$

c) Find Stansylvania's equilibrium quantity demanded, quantity supplied, quantity imported, consumer surplus, producer surplus, government revenue, and total economic surplus (including government revenue) if its government imposes an import tariff of 20 per unit.

$$q_d = \underline{\hspace{2cm}} \quad q_s = \underline{\hspace{2cm}} \quad q_i = \underline{\hspace{2cm}} \quad CS = \underline{\hspace{2cm}} \quad PS = \underline{\hspace{2cm}} \quad GR = \underline{\hspace{2cm}} \quad TES = \underline{\hspace{2cm}}$$

d) What is the deadweight loss of the tariff in part c? _____

e) On both graphs below, draw marginal benefit, marginal cost, and world price. On the first graph, use different shading to indicate consumer surplus and producer surplus. On the second graph, use different shading to indicate consumer surplus, producer surplus, government revenue, and deadweight loss.



4. Macroeconomics

a) What does the real GDP per capita statistic tell us about a country's standard of living? What does it leave out? Give two clear and distinct examples of the latter.

b) Explain the difference between frictional, structural, and cyclical unemployment. Discuss some different causes of structural unemployment.

c) What is inflation? How can it be measured? Explain why several different measures are possible.

d) Explain the way in which private banks can create money.