

THIRD TEST. ECON 100C, SPRING 2016. NAME: _____

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

1. Long run market equilibrium (12 points) Suppose that every firm in a particular industry (which is perfectly competitive) has the cost function $C(q) = 20q + \frac{1}{20}q^2 + 45$, and thus the marginal cost function $MC(q) = 20 + \frac{1}{10}q$, where q is the quantity of output it produces. Market demand is given by the function $Q_d(p) = 530 - 10p$. 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 32 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 a few words: why?

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 $n^* =$ _____.

2. Supply and demand, with trade (12 points) Suppose that domestic demand and supply of bananas in Stansylvania can be represented by the following marginal benefit and marginal cost functions: $MB = 140 - \frac{1}{10}q$, and $MC = 20 + \frac{2}{10}q$ (where q gives the quantity of bananas consumed or produced, and cost and benefit are given in cents). 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.

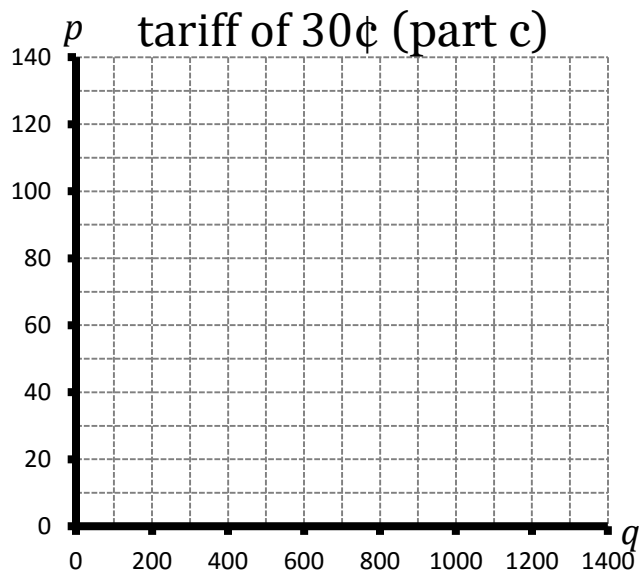
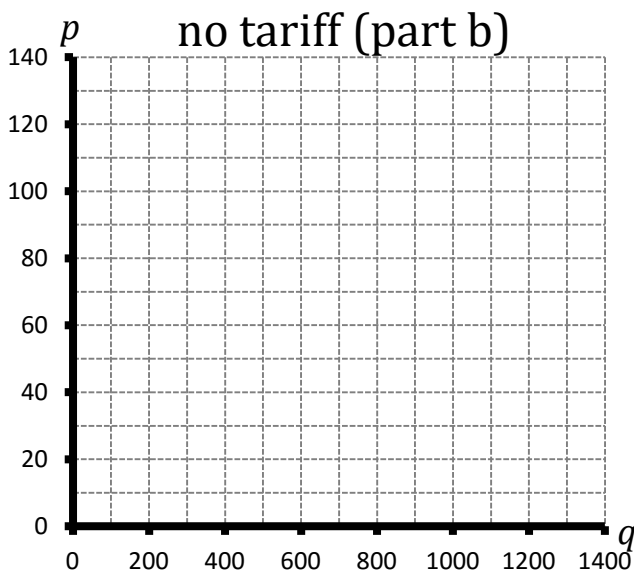
$$q_d = \underline{\hspace{2cm}} \quad q_s = \underline{\hspace{2cm}} \quad q_i = \underline{\hspace{2cm}} \quad CS = \underline{\hspace{2cm}} \quad PS = \underline{\hspace{2cm}} \quad TES = \underline{\hspace{2cm}}$$

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 30¢ 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? $\underline{\hspace{2cm}}$

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.



3. Comparative advantage. (6 points) There are two neighboring countries: Florin and Guilder. In a day, a Florinese worker can produce either 25 pitchers or 15 swords, and a Guilderian worker can produce either 18 pitchers or 12 swords, as shown by the table on the left and below:

		units per day	
		Pitchers	Swords
Florin		25	15
Guilder		18	12

		opportunity cost	
		pitchers	swords
Florin		swords	pitchers
Guilder		swords	pitchers

a) Complete the opportunity cost table, to show how many swords each country must give up to get an extra pitcher, and vice versa, without trade.

b) _____ has an absolute advantage in pitchers. _____ has an absolute advantage in swords.

c) _____ has a comparative advantage in pitchers. _____ has a comparative advantage in swords.

d) If _____ gives _____ *ten* swords for any number of pitchers between _____ and _____, then both countries can potentially be made better off.

4. Inflation (3 points) What is inflation? How can it be measured? Explain why several different measures are possible.

5. Business cycle (3 points). What is the business cycle? Illustrate the business cycle with a graph, taking care to label the axes. Explain your graph, identifying recessions and expansions.

6. Economic growth (4 points) What does the real GDP per capita statistic tell us about a country's standard of living? What does it leave out?

7. Aggregate supply (4 points) Draw the short run aggregate supply curve, clearly labeling both axes. Explain carefully why the curve has the shape you gave it, according to the theory in the Krugman et al book.