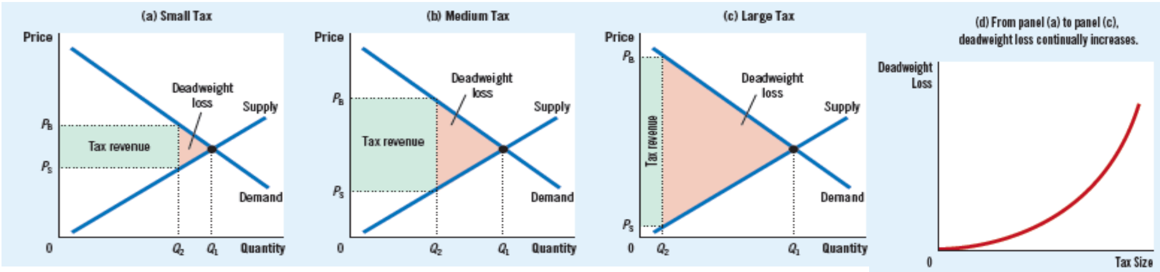
<u>Answer Key</u> - <u>SET B</u>

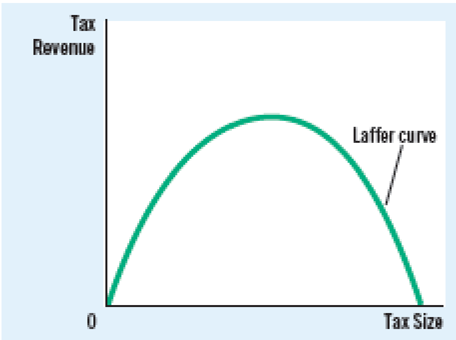
1. Answer the questions using appropriate diagrams

a) FALSE. The incidence of taxation falls on buyers if there is an inelastic demand or sellers if there is an inelastic supply.

b) The imposition of a tax creates welfare loss the economy in the form of deadweight loss. The size of deadweight loss of increases with increased size of the tax.



c) The Laffer Curve relationship indicates that tax revenue can be obtained maximum when the tax rate is optimum. Beyond the optimum level, people look for ways to evade taxation and the overall tax revenue reduces.



The question can also be answered using the three diagrams given above.

2. Cost function question

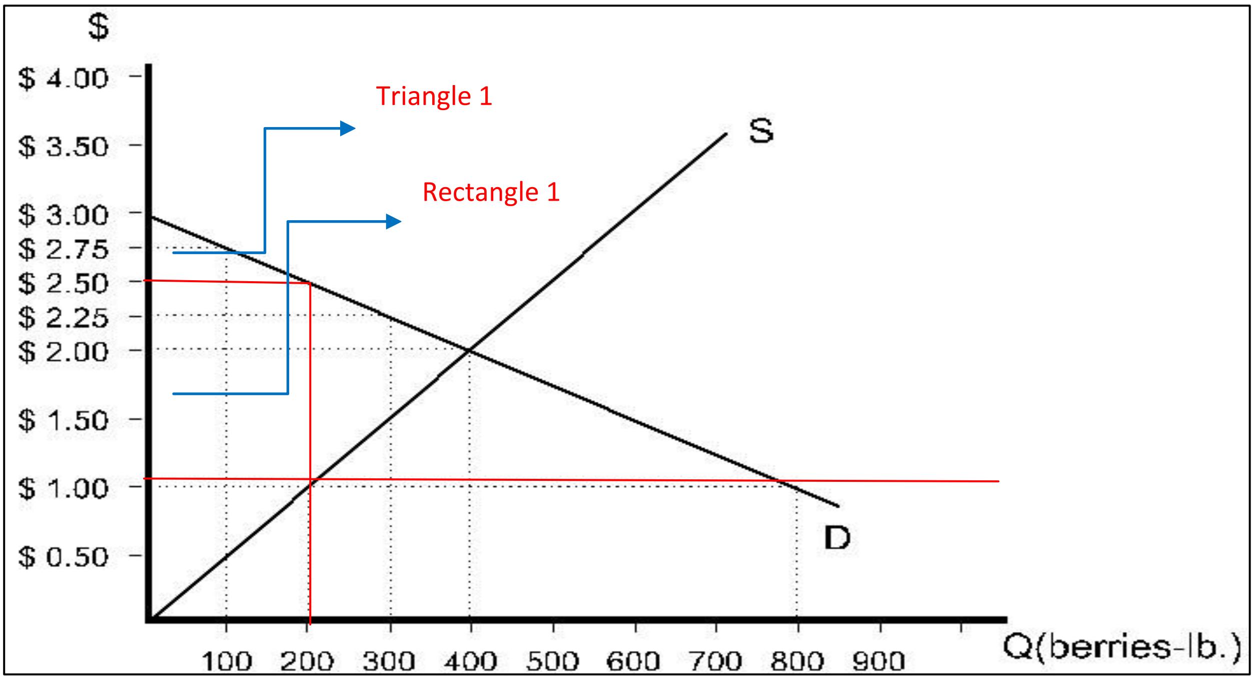
a) $45000.

b)

Output	TC	TVC	TFC	MC	AC	AVC	AFC
0	40	0	40				
1	45	5	40	5	45	5	40
2	60	20	40	15	30	10	20

3	79	39	40	19	26.33	13	13.33
4	105	65	40	26	26.25	16.25	10
5	150	110	40	45	30	22	8
6	200	160	40	50	33.33	26.67	6.67

3. Consumer surplus and producer surplus question



a) Consumer surplus = ½ * 400 * (3-2) = $200

b) Producer surplus = ½ * 400 * (2-0) = $400

Total surplus 1 = $600

When price ceiling of $1 is imposed, quantity demanded becomes 800 units but quantity supplied is 200 units. (DRAWING A STRAIGHT LINE DOWN GIVES YOU 200) There is a shortage. The available quantity is limited to only 200 units for which some consumers are willing to pay $2.50. Their consumer surplus will be triangle 1. Other consumers are willing to pay $1. Their consumer surplus is rectangle 1.

c) CS after price ceiling is = [(½ * 200 * (3-2.50)) + (200*(2.5-1))]= $350

d) PS after price ceiling is (as they receive only $1) = ½ * 200 * 1 = $100

Total surplus 2 = $450

e) Deadweight loss = TS 1 – TS 2 == $150.

4. The market for soft drinks

Demand: $Q^d = 112\text{-}P$;   Supply: $Q^s = 3P$

a) 112-P = 3P
   4P = 112
   P = 28
   Q = 84
b) A tax of $4 on sellers.

   New supply equation will be 3(P-4) ➔ 3P – 12.

   Please note that the tax is imposed on per unit of a commodity that the seller sells. And as a result of tax, the sellers receive a lower price, indicating P-4. The demand curve remains the same.

   112-P = 3P – 12

   4P = 124

   P =31; Q = 81

c) A tax of $4 on buyers.

   New demand equation will be 112 – (P+4) ➔ 120 – P -4.

   Please note that the tax is imposed on per unit of a commodity that the buyer buys. And as a result of tax, the buyer has to pay a higher price, indicating (P+4). The supply curve remains the same.

   112-P-4 = 3P

   4P = 108

   P =27; Q = 81

   Note that in the case of a buyer tax or seller tax, the output remains the same,

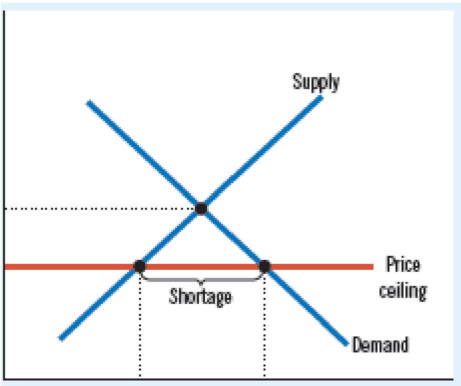
5. Identifying the parts in the graph

a) Cost
b) Quantity or Output
c) Marginal cost
d) Average cost
e) Average variable cost
f) Average fixed cost
g) MC intersects the AC at the latter’s minimum. This is the point of efficient scale. The output level which minimizes the average cost.

h) Average fixed cost. The difference between average cost and average variable cost is the average fixed cost. As output increases, the average fixed cost declines but gradually.

6. Answer the following sub-questions

a) Even though the price ceiling increases demand for the programme, fewer people will attend the programme as the supply will be restricted and a shortage is created as a result of a price ceiling.



b) True or False.

i. TRUE: A tax is a market distortion that reduces overall surplus in an economy by extracting tax revenue from consumers and producers. Even the smallest amount of tax imposition generates some cost of taxation in the form of deadweight loss.

FALSE: A case of perfectly inelastic demand or supply, the tax revenue can be positive without any cost of taxation or deadweight loss.

i. TRUE: When marginal product is increasing, in the early stages of production, the marginal cost will be declining.

ii. FALSE: Increase in the number of consumers indicates a price fall, that increases the surplus of existing consumers and raising surplus for the new consumers.