

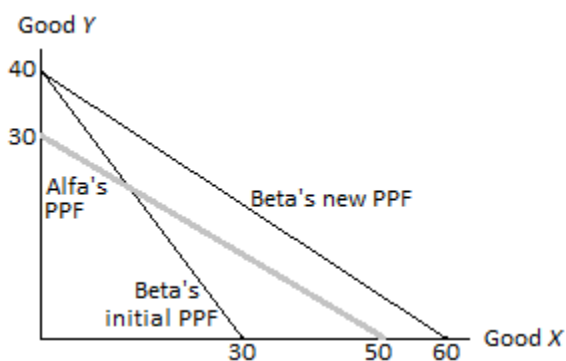
Answers to Part A

Version	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12
A	b	d	b	a	c	b	c	b	b	d	d	a
B	a	c	d	d	b	c	d	c	c	b	d	c
C	c	a	a	d	a	d	b	b	c	b	b	c
D	b	b	a	c	d	a	a	a	a	b	a	c

Answers to Part B

Question 1

a) The PPF shows the maximum quantity of one good the country can produce given the quantity produced of the other good. The figure to the right shows Alfa's PPF (thick, gray), the Beta's initial PPF, and Beta's new PPF asked in part c).



b) Initially Alfa has a comparative advantage in good X, and Beta in good Y, as they have absolute advantages in these goods too. Also Alfa's opportunity cost of good X is 0.6 units of good Y ($30/50$, the slope of the PPF), which is lower than Beta's, which is 1.333 ($40/3$), which again shows Alfa has a comparative advantage in good X. So necessarily Beta has a comparative advantage in good Y.

c) Beta's new PPF is shown in the figure above. Beta's new opportunity cost of good X is now 0.667 ($40/60$), so still higher than Alfa's, which means the comparative advantages are still the same.

Question 2

a) In equilibrium $Q_S = Q_D \Leftrightarrow 10 + 2p = 50 - 2p \Leftrightarrow 4p = 40 \Leftrightarrow p = 10$. $Q = Q_S = 10 + 2 \times 10 = 30$.

b) After the tax was introduced the consumer price p_D equals the producer price net of tax p_S plus the tax per unit. So in equilibrium $Q_S(p_S) = Q_D(p_D) \Leftrightarrow 10 + 2p_S = 50 - 2p_D \Leftrightarrow 10 + 2p_S = 50 - 2(p_S + 1) \Leftrightarrow 4p_S = 38 \Leftrightarrow p_S = 9.5$; $p_D = p_S + 1 = 10.5$; $Q = Q_S(9.5) = 10 + 2 \times 9.5 = 29$.

c) Tax revenue is unit tax time quantity, so $1 \times 29 = 29$. The deadweight loss is the consumer and producer surplus lost owing to the reduction in quantity traded, so (drawing the graph would help) $1 \times 1/2 = 0.5$.

d) The tax caused the consumer price to rise 0.5 from 10 to 10.5 and the producer price to fall by 0.5 from 10 to 9.5; So producers and consumers share the tax burden equally.

Question 3

a) The various costs (also the necessary for part c) are shown in the next table:

Quantity, Q	0	1	2	3	4	5	6	7
Total costs, TC	63	73	81	87	95	110	132	161
Variable cost, $VC = TC - 63$	0	10	18	24	32	47	69	98
Marginal cost	-	10	8	6	8	15	22	29
Average variable cost = VC/Q	-	10	9	8	8	9.4	11.5	14
Average total cost = TC/Q	-	73	40.5	29	23.75	22	22	23

The law of diminishing returns means that when there is a fixed input the marginal product of the variable input decreases as one uses more and more of it beyond a certain level. As a consequence of this marginal cost will increase beyond that same level. Marginal cost increases with output when the firm produces more than 3 units, so the firm exhibits the law of diminishing returns when it produces more than three units.

b) The firm maximises profit by producing all units with marginal cost not exceeding the price, as long as the price is not less than the average variable cost. So it maximises profit by producing 5 units, with marginal cost equal to price and average variable cost, 9.4, less than the price. The profit is $pQ - TC = 15 \times 5 - 110 = 75 - 110 = -35$. So the firm makes a loss, but it should keep producing 5 units in the short run, for if it produce nothing it would make a bigger loss, -63, i.e. the fixed costs.

c) The shut-down price is 8, the minimum average variable cost, when it produces 4 (or 3) units. If the price is lower the firm should shut down as its revenue would not cover the variable costs, and the loss would be higher than the fixed costs. The break-even price is 22, the minimum average total cost, when the firm produces 6 (or 5) units. When the price is 22 the firm has zero profit, i.e. it breaks even; at lower prices it makes a loss; at higher prices it makes a positive profit.