1. (A) The firm generates producer surplus as shown on the graph below. The firm will earn normal (zero) profit, as P = AC, so TP = (P — AC)/Q = 0.
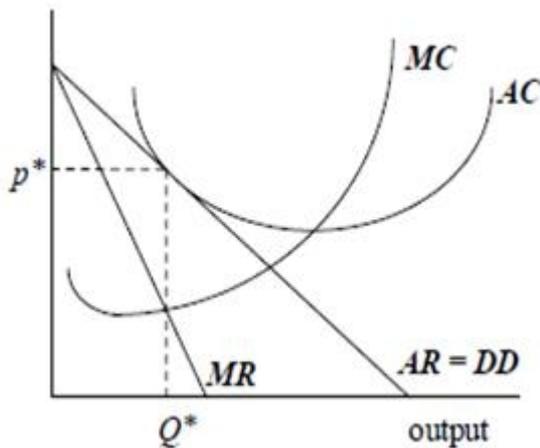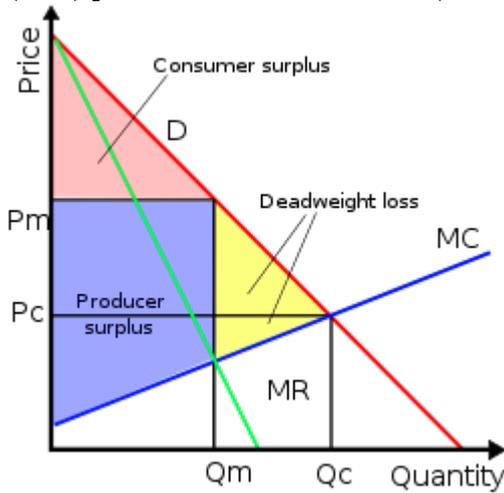
(B) If the government reduces annual licensing fees, causing the fixed cost of the typical firm to fall, producer surplus will increase.
Profit will increase and become positive, so the fall in fixed costs will cause entry into or exit from this industry, because now it is potentially profitable.

2. Qd= 45 – 0.25P, TC = 1000 + 20Q, P = 180 - 4Q
(A) The profit-maximizing price for this seller will be at the quantity, for which MR = MC.
MR = TR' = (P*Q)' = 180 – 8Q
MC = TC' = 20
So, 180 – 8Q = 20
Q = 20 units.
P = 180 – 4*20 = $100.
TP = TR – TC = 100*20 – (1000 + 20*20) = $600
(B) If the government levies a £40 tax per unit on sellers of silk garments, the price will increase by £40.