

### Problem Set 3 – Solutions

1.
  - a.  $Q_e = 6,000$ ,  $P_e = 30,000$ ;  $Q_u = 2,000$ ,  $P_u = 35,000$ ; Profit = 110 million
  - b. Demand is more elastic in its domestic (European) market.
2.
  - a. 12
  - b. 18
  - c. 6
  - d. 24
  - e. 49
  - f. 6
  - g. 13.5
3. Discussed in class.  $T = 9$ ,  $P = 2$
4.
  - a. Offering a bundled price = 20 yield  $TR = 80$ , which is superior to the best  $TR$  available under separate pricing, which is only 60.
  - b. Negatively correlated reservation prices.
5. Discussed in class.
  - a.  $Q^* = 2,000$ ,  $P^* = 10$ ,  $S^* = 400$
  - b. Profit = 7,600,  $CS = 2,000$
  - c.  $Q = 1,900$ ,  $P = 9.7$ , Profit = 7,220,  $CS = 1,805$
6.
  - a. Three NE: Both charge 5, both charge 6, both charge 7
  - b. One NE: Both charge 10
  - c. Same as part (b)
  - d. No advantage to further increasing switching costs once  $s = 2$
7. Bakery products: 0.85  
Books: 0.32  
Canning: 0.75  
Cereals: 0.15  
etc.
8.
  - a. “Build Value” generates a net contribution of 3.025 million, which exceeds the cost of the campaign, so it is worth doing.
  - b. “Exceeds Reach” generates a net contribution of 2 million, which exceeds the cost of the campaign, so it is worth doing.
  - c. “Build Value”
9. Derivation of equation (14.3) shown in class.
10. This is Cabral’s practice exercise 16.3.
  - a. Both firms charge  $p = 5$  and earn zero profits.
  - b. 20,000