EC3322
Industrial Organization I
Semester 2, 2014-2015
Midterm Exam Solutions

1. b, 2. e, 3a. increase, 3b. decrease

4. (There are several possible answers to this question.) Lunch customers are likely more price sensitive and hence have more elastic demand since they eat out more frequently and have more opportunities to compare prices. An alternative explanation that does not rely on price discrimination is that turnover is faster during lunch time, and thus, dinner guests are paying extra to linger, which precludes the use of the table by other diners.

5. Staples and Office Depot could claim that their merged firm would enjoy economies of scale from having more bargaining power over suppliers, leading to lower costs and prices. (Note, like most retailers Staples and Office Depot do not actually manufacture their products.) This argument is not very believable, though, because both firms were already very big and economies of scale were likely already exhausted.

6. (a) $MC = AC \Rightarrow q^* = \frac{1}{2}$ and $p^* = \dfrac{1}{2}$

   (b) $n = \dfrac{Q^*}{q^*} = \dfrac{100}{1/2} = 200$

   (c) $HHI = \displaystyle\sum_{i=1}^{n} s_i^2 = n s_i^2 = n\left(\frac{100}{n}\right)^2 = \frac{10,000}{200} = 50$

7. (a) Under first-degree price discrimination, the firm sets $P = MC$ and charges a fee, F, that equals the consumer surplus under uniform pricing: $P_T = 1$, $F_T = 5$ and $P_L = 1$, $F_L = 1$.

   (b) Consider first that the firm offers two packages. Under second-degree price discrimination, the high demand customer receives the efficient amount of quantity, the low demand customer's willingness to pay is completely extracted, and the high demand customer receives CS equal to the amount he would receive if he bought the low demand package: $q_T = 3, F_T = 6$ and $q_L = 1, F_L = 2$. This package earns profits = 4. However, note that the firm can offer a single package of $Q_T = 3, F_T = 8$ (or $Q_T = 2, F_T = 7$), with $\pi = 5$. So the firm offers a single package designed for tourists, and the locals do not visit Legolandia.