EC 8854, Problem Set 2

Questions

1. For each of pair of demand curves described in (a), (b), and (c), using the setup of Dana's (1999) game, calculate equilibrium prices and quantities under both monopoly and perfect competition. For each of (a), (b), and (c), comment on how price dispersion varies with the level of competition. Explain (including intuition) why this coincides or differs from Dana's (1999) result. In each case assume that the low and high demand states are equally likely, so that $\Pr(\theta = L) = \Pr(\theta = H) = 1/2$.

   (a) $P = 10 - Q/\theta$; $Q = \theta(10 - P)$; $L = 100$; $H = 200$; $\lambda = 1$; $c = 0$.

   (b) $P = \sqrt{\theta/Q}$; $Q = \theta/P^2$; $L = 1600$; $H = 3200$; $\lambda = 1$; $c = 0$.

   (c) $P = \theta - Q$; $Q = (\theta - P)$; $L = 10$; $H = 20$; $\lambda = 0$; $c = 1$.

2. Tirole (1988) states on page 138 of Chapter 3 that third-degree "price discrimination reduces welfare if it does not increase total output."

   (a) Explain why.

   (b) The result assumes quasi-linear utility, as does much welfare analysis in IO. What is the implicit assumption about the relative weights on utility functions of low- and high-income individuals in the social welfare function?

   (c) Leslie (2004) does not assume quasi-linear utility. Do you think Leslie's (2004) social welfare function appropriately weights utility of rich versus poor individuals?