3.   Suppose 2 firms compete on quantity with inverse demand function $p = 1 - bQ$ where Q is total output. They have zero costs. Demand varies over time. Specifically, the parameter b is either b_H or b_L with equal probability each time period, with $b_H > b_L > 0$. Both firms know the level of demand at the start of the period.   Show that in the indefinitely repeated game, with rate of time preference δ, the monopoly level of output can be supported as a subgame perfect equilibrium. What strategies support this outcome? What would be the optimal deviation? Hence, calculate the lowest value of the rate of time preference δ for which the joint profit maximizing output is possible.