

Problem Set 6 – Signaling Games
Microeconomics II (Allievi Programme)

1. Solve Mas-Colell, Whinston & Green 13.C.5. (Hint: the answer to part b is *no*; to prove non-existence of a separating PBE you should use the fact that $c_H > c_L$.)
2. Consider the signaling model with two types of workers presented in Mas-Colell *et al*, section 13.C. Assume that $\theta_L = 1$ and $\theta_H = 4$. Workers can acquire education before entering the labour market; education does not change workers' productivity. Let the cost function for education be: $c(e, \theta) = e^2 / (3\theta)$. The utility of a worker of type θ is then given by: $u(w, e | \theta) = w - e^2 / (3\theta)$.
 - i*) Find the lowest and highest possible levels of education chosen by the types- H in a separating PBE.
 - ii*) Let $\lambda \in (0, 1)$ denote the fraction of types- H in the economy. For which values of λ might the types- H be better-off when they can use schooling to signal their intrinsic ability?
3. Consider again the signaling model with two types of workers presented in Mas-Colell *et al*, section 13.C. Let \tilde{e} denote the lowest possible level of education chosen by the types- H in a separating PBE. Show that in any separating PBE it must necessarily be the case that $\mu(e) < 1$ for all $e < \tilde{e}$. (Hint: solve graphically.)