Department of Economics, University of California, Davis

Ecn 103 – Uncertainty and Information – Professor Giacomo Bonanno

HOMEWORK # 5 (for due date see the web page)

Let y denote the amount of education. There are three types of potential workers: those (Group I) with productivity **18** (a constant, thus independent of education), those (Group II) with productivity (**30 + 3*y***) and those (Group III) with productivity (**40 + 2*y***). Each worker knows whether she belongs to Group I or Group II or Group III, while the potential employer does not.. The cost of acquiring y units of education is **12y** for Group I, **6y** for Group II and **3*y*** for Group III. The potential employer believes that those applicants with education **less than *a*** belong to Group I, those with education **at least *a*, but less than *b*,** belong to Group II and those with education **at least *b*** belong to Group III and offers each applicant a wage equal to the applicant's estimated productivity (the level of education can be verified by the employer during the job interview).

(a) Write a list of inequalities (involving the parameters a and b) that are necessary and sufficient for the existence of a signaling equilibrium.

(b) Explain why $a = 3$ and $b = 4$ is not a signaling equilibrium.

(c) Is $a = 3.5$ and $b = 6$ a signaling equilibrium? [Explain your answer.]