Consider the job market signalling model we introduced in class. In the model in class, the signalling was noiseless in the sense that the education level chosen by the worker was identical to the educational level observed by the firm. Now we enrich this model so that the observed signal by the firm $s$ is the educational level plus some noise $\varepsilon$. Formally

$$s = e + \varepsilon$$

where

$$\varepsilon \sim N(0, \sigma^2).$$

We are interested in observing the equilibrium behavior of the workers and the firm for the case that the noise vanishes, i.e. $\sigma \to 0$ and hence the model converges to the model we discussed in class. The novelty with this model is that because of the unbounded support of the signal $s$, every signal $s$ is on the equilibrium path in the sense that it is realized with positive density (and in fact for every $e$).

Conjecture 1. The only pooling equilibrium to survive is the pooling equilibrium with the lowest effort level. (Easy?)

Conjecture 2. There can be at most one signalling equilibrium. (More Difficult?)