Economics 326: Suggested Solutions to Midterm 1

1 February, 2004

1. There are two equilibria. First, only low types trade and $p = 8$. Second, low and medium types trade and $p = 10.5$.

2. Suppose proportion π are low quality.
(a) The equilibrium where only low types trade always exists.
(b) The equilibrium where both types trade exists if $20\pi + 30(1 - \pi) \geq 25$. That is, $\pi \leq 1/2$.

3. Multiplicative reserve values:
(a) The expected quality, given price p, is $E[\theta | r(\theta) \leq p] = E[\theta | \theta \leq 4p/3]$. This equals $2p/3$ if $p \leq 3/4$, and $1/2$ if $p \geq 3/4$. Hence the unique equilibrium is $p = 0$. There is complete unravelling.
(b) The expected quality, given price p, is $2p$ if $p \leq 1/4$, and $1/2$ if $p \geq 1/4$. Hence there are two equilibria: $p = 0$ and $p = 1/2$. The latter seems more reasonable and is the only stable one.