

Economics 326: Midterm 1

1 February, 2006

This test is closed book. It is marked out of 100. You have 60 minutes. Good luck.

The following question all concern Akerlof's model of trade with asymmetric information. As in the lecture, a competitive equilibrium is a price and set of traded qualities where: (a) the price equals the buyers willingness to pay; and (b) a seller trades if and only if their valuation for the object is less than the market price.

Question 1 (30 points)

Consider Akerlof's model with equal numbers of three types of sellers.

- If quality is low, the buyers' and sellers' values are $v_B^L = 8$, $v_S^L = 5$.
- If quality is medium, the buyers' and sellers' values are $v_B^M = 13$, $v_S^M = 10$.
- If quality is high, the buyers' and sellers' values are $v_B^H = 18$, $v_S^H = 15$.

Describe which types trade and the resulting prices in the competitive equilibria of this model.

Question 2 (30 points)

Consider Akerlof's model with two types of sellers. Proportion $\pi \in (0, 1)$ are of low quality.

- If quality is low, the buyers' and sellers' values are $v_B^L = 20$, $v_S^L = 10$.
- If quality is high, the buyers' and sellers' values are $v_B^H = 30$, $v_S^H = 25$.

(a) For what values of π does a competitive equilibrium exist where only low types trade?

(b) For what values of π does a competitive equilibrium exist where both low and high types trade?

Question 3 (40 points)

Consider Akerlof's model with a continuum of types. Each seller has a good of quality $\theta \sim U[0, 1]$. As in the lecture, a buyer values a good of quality θ at θ .

In the following two cases, identify the equilibrium price levels. If there are multiple equilibria, which is most reasonable?

(a) A seller's reserve value for a good of quality θ is given by $r(\theta) = 3\theta/4$.

(b) A seller's reserve value for a good of quality θ is given by $r(\theta) = \theta/4$