Exercises for Seminar 5 Fall 2011

1) The putting out system

Use the model presented on the lectures as a starting point, but assume:

$$U(w,e) = w - \frac{1}{2}e^2$$
$$f(e) = e$$

output price $p = 1$ and $w = q \times e$

1. Show that in equilibrium: $e = q = \frac{1}{2}$
2. Draw iso-surplus and iso-utility curves, illustrate the equilibrium.
3. Explain the intuition behind U-shaped iso-utility curves.
4. For which values of q is a pareto-improvement possible, if e is set to 1?
5. Why isnt such (e, q)-combinations incentive compatible?

2) Contingent renewal

Use the model presented on the lectures as a starting point, but assume:

$$U(w,e) = w - \frac{1}{2}e^2$$

Probability of contract renewal, $p = A + a \times e$, for a suitable choice of a and A.

1. Derive the optimal effort of the worker as a function of w.
2. Show that $e = \frac{aR}{1+r-p}$, where $R = r\frac{u(w,e)}{r-Vu}$ is the employment rent.
3. Show that $\frac{de}{dw} = \frac{a}{1+r-p}$
4. Compare the equilibrium with the equilibrium in the putting-out system