Econ 237: Public Economics NAME: _____

Problem set 4, due Wednesday 5/4/2016

Rawlsian redistribution

1. You are with others behind a Rawlsian 'veil of ignorance', which makes it so that no one knows whether he or she will be rich or poor. What you do know is that you have (and everyone else has) a $\pi_R = 1/10$ chance of being rich, in which case you will start off with a wealth of $w_R = 180$, and pay a tax of x. On the other hand, you have a $\pi_P = 9/10$ chance of being poor, in which case you will start off with a wealth of $w_P = 12$, and receive an equal share of the tax revenue from the rich, along with all of the other poor people. However, redistribution is 'leaky', such that only $\delta = 1/2$ of the wealth extracted from the rich can reach the poor, while the remaining half is wasted.

Let c_P be your consumption if poor (after receiving your share of the tax revenue), and let c_R be your consumption if rich (after paying the tax). Find the value of x that maximizes your expected utility if you have the von Neumann-Morganstern utility function $V(c) = \sqrt{c}$. Also, find the values of c_P and c_R that correspond to this value of x.

2. Try the same exercise, with some different values: $\pi_R = 1/5$, $\pi_P = 4/5$, $w_R = 1000$, $w_P = 50$, $\delta = 4/5$, and $V(c) = \ln c$.

3. Leave π_R, π_P, w_R, w_P, $V(c)$ and δ general, and derive the first order condition for the optimal level of redistribution.

4. Explain how you performed the derivation in (3), and what if anything it has to do with questions of redistribution in the real world.