HOMEWORK 6. Due Monday March 21.

1. A consumer lives for 3 periods and earns 100\$, 200\$, and X\$ in period 1, 2, and 3 respectively. X is a Normally distributed random variable with mean 400 and variance 2. The consumer has a quadratic utility function and is—in period 1—allowed to freely borrow and lend at an interest rate that equals his or her rate of time preference (to be paid back in period 2). The consumer is not allowed to borrow or lend in period 2. Let C_i be the consumption of the representative consumer in period i. Is $C_1 = E(C_2)$ and is $C_2 = E(C_3)$? Find C_1, C_2, and C_3.
[NOTE: This question is modified from one on the 2004 make-up core exam.]

2. Romer 7.9. (This homework builds on a very famous paper by Lucas and it is important that you try to understand the details.)