Homework # 3

1) Consider the problem of a representative consumer,

$$Max \quad E_0\left\{\sum_{t=0}^{\infty}\beta^t\left(\ln c_t\right)\right\}, \qquad 0<\beta<1$$

Subject to $$c_t + L_{1t} + L_{2t} \le d_t + L_{1t-1}R_{1t-1} + L_{2t-2}R_{2,t-2}$$

Where c_t is consumption at time t,

$L_{i\,t}$ is the amount a perfectly safe loan that lent for i periods at t, and i = 1, 2,

R_{it-i} is the rate of returns of this perfectly safe loan for i periods,

d_t is a random dividend from a tree at

1) Find the price of a one period perfectly sure claim of 1 unit of consumption at t+1, (or R_{1t}^{-1}),
2) Find the price of a two period perfectly sure claim of 1 unit of consumption at t+2, (or R_{2t}^{-1}),
3) Under what situation that one has $R_{1t}.E_tR_{1t} < R_{2t}$ in equilibrium. What is its economic rationality?