

Econ 2300 Assignment 2

due : Wednesday March 21 2007, 11.30 a.m.

answer all 5 questions : all count equally

1. If a person earned Y_P when young, and Y_F when old, how would her saving vary with the net rate of return r to saving, if her preferences could be represented by the utility function

$$u(C_P, C_F) = C_P C_F$$

where C_P is her consumption when young and C_F her consumption when old?

2. Suppose that a person's preferences over food and clothing consumption could be represented by the utility function

$$u(F, C) = F + 2\sqrt{C}$$

where F is her food consumption, and C her clothing consumption. If her income were 12, and if the price of food were \$1, then what would be the compensating variation to an increase in the price of clothing from \$1 to \$2?

3. Suppose that a person's preferences over food and clothing consumption could be represented by the utility function

$$u(F, C) = F + 2\sqrt{C}$$

where F is her food consumption, and C her clothing consumption. If her income were 12, and if the price of clothing were \$1, then what would be the compensating variation to an increase in the price of food from \$1 to \$2?

4. A firm is considering building a new factory. The factory will cost \$10 million to build. It will yield a return of \$31 million next year. But the factory would have to be dismantled, and the site of the factory cleaned up, at a total cost of \$22 million, 2 years from now.

For what annual interest rates is it a good idea for the firm to build the factory?

5. Suppose that the market value of a bottle of wine depends on the age of the wine. In particular

$$v(t) = 30t - t^2$$

where t is the number of years the wine has been aged, and $v(t)$ is the market price of the bottle of wine.

If a person owns a bottle of wine, which she plans to sell, when should she sell it if she faces an interest rate of 5% per year?