Topic 3 Part 4

The Theory of Demand (Chapter 5)

EXTRA

LEARNING-BY-DOING EXERCISE 5.8

Compensating and Equivalent Variations with No Income Effect

As in Learning-By-Doing Exercise 5.6, a student consumes chocolate and "other goods" with the quasilinear utility function $U(x, y) = 2\sqrt{x} + y$. She has an income of \$10 per day, and the price of the composite good y is \$1 per unit. For this utility function, $MU_x = 1/\sqrt{x}$ and $MU_y = 1$. Suppose the price of chocolate is \$0.50 per ounce and that it then falls to \$0.20 per ounce.

Problem

(a) What is the compensating variation of the reduction in the price of chocolate?

(b) What is the equivalent variation of the reduction in the price of chocolate?

CV, EV, and Consumer Surplus in a Quasi-Linear Utility Function

- With a quasi-linear utility function, there is no income effect. (Verify this in Topic 3 Part 4 Page 7)

- Given the SE, X_A moves to X_B.
- But without the IE, $X_B = X_C$.
- This is because the ICs are parallel.

- We will have **CV = EV = Consumer Surplus** in this case.

LEARNING-BY-DOING EXERCISE 5.9

Compensating and Equivalent Variations with an Income Effect

As in Learning-By-Doing Exercise 5.4, a consumer purchases two goods, food x and clothing y. He has the utility function $U(x, y) = xy$. He has an income of \$72 per week, and the price of clothing is \$1 per unit. His marginal utilities are $MU_x = y$ and $MU_y = x$. Suppose the price of food falls from \$9 to \$4 per unit.

Problem

(a) What is the compensating variation of the reduction in the price of food?

(b) What is the equivalent variation of the reduction in the price of food?