

# Microeconomics

Fall 2011

Class #8: Consumer Theory: comparative statics; substitution effect, ordinary income effect and endowment income effect; compensating variation and equivalent variation.

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Classes: 40, 41

## Question 1

Consider a consumer whose preferences are summarized by the utility function  $U(x_1, x_2) = \sqrt{x_1} + x_2$ , where  $x_1$  and  $x_2$  represent consumed quantities of goods 1 and 2, respectively. Denote by  $p_1$  and  $p_2$  the prices of goods 1 and 2 and by  $w_1$  and  $w_2$  the endowments of goods 1 and 2, respectively.

(i) Determine the optimal choice for this consumer if prices are  $p_1 = 2$ ,  $p_2 = 8$  and the endowments are  $w_1 = 8$  e  $w_2 = 4$ .

(ii) Now suppose that the price of good 1 decreases to  $p_1 = 1$ . Decompose the change in consumption of good 1 into substitution effect, ordinary income effect and endowment income effect (“efeito reavaliação da dotação”). Justify your answer and illustrate graphically.

## Question 2

Consider a consumer whose preferences are well described by the following utility function:  $U(x_1, x_2) = x_1 + 2x_2$ . Assume that the consumer has income  $m$ , and let  $p_1$  and  $p_2$  denote the prices of good 1 and 2, respectively.

(i) Determine the Marshallian demand function for good 1 and 2.

(ii) Determine the Hicksian demand function for good 1 and 2.

(iii) Assume that initially  $(p_1, p_2) = (\frac{1}{3}, 1)$  but  $p_1$  increases to 1. Compute the compensating variation and the equivalent variation due to this price increase.