

## Microeconomics — class 7

1. Decompose change of demand for Cobb-Douglas preferences into income and substitution effects using continuous Slutsky equation.

2. Prove that substitution and income effect in every form of Slutsky/Hicks equation are independent of choice of utility function representing preferences (despite the fact that compensated demand function depends on this choice).

3. Decompose change of demand into income and substitution effects using (discrete) Slutsky equation and Hicks equation — calculate effects for both goods in the case when  $p_1$  grows while  $p_2$  remains constant in the following cases.

a) Cobb-Douglas utility with  $a_1 + a_2 = 1$ ;

b) perfect complements;

c) perfect substitutes, in the case when only good 1 was consumed before the change and

(i) after the change still only good 1 is consumed;

(ii) after the change only good 2 is consumed.

4. Which of the two curves is more price elastic i.e. has greater decrease in income after increase of price (greater absolute value of price elasticity). Consider only situation when there is no Giffen effect.

5. An owner of a brewery consumes apples and beer. His utility function with marginal rate of substitution  $MRS(j, p) = \frac{p}{2j}$  (apples are measured in kg, beer in bottles).

Now both prices are 3, and the brewer has 1 kg of apples and 1000 bottles of beer.

What will be the effect of

a) increase in price of apples;

b) increase in price of beer?

What part of the change is a result of substitution effect and which is a result of wealth effect (from continuous Slutsky equation)?