Price Theory I TFUs
Practice Set 11

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1. In general, the demand for an input will be more elastic than the demand for the output produced due to the ability to substitute among factors as well as adjust output. (3.1.8, Core 2003)

   Uncertain. Note that $\Delta L - \Delta w = s_L \epsilon^D - s_K \sigma = s_L(\epsilon^D + \sigma) - \sigma$. We thus see that the veracity of the statement depends on the cost share of input and the relative magnitudes of the elasticity of demand elasticities of substitution.

2. An increase in the present value of income for a household generated by a fall in real interest rates will increase current consumption. (3.9.6, Final 2002)

   Uncertain. Depends on whether the person is an et borrower or a net saver.

3. An increase in a household's production technology that is factor neutral and uniform across commodities would not affect the total hours worked by the households in the market place. (3.17.5, Core 2006)

   False. An increase in a household's production technology that is factor neutral and uniform across commodities would not affect the total hours worked by the households in the market place. (Core 2006)

4. A rise in the price of an input will reduce the profits of a monopolist but may actually increase the profits of a competitive industry. (4.5.6, Final 2001)

   True. A monopolist cannot be made more profitable if his costs increase, because that would imply it is operating at a point that was feasible before, but produced less profit. However, a competitive industry can increase its profit if demand is inelastic and some factors are fixed (which allows the MC to be above AC and earn profits in the short-run).

5. Higher future demand for computing would imply lower prices of computing today. (4.22.6, Fall 2007 Final)

   True If computing is considered as a capital service. Computing power depends on processors, servers, etc. Then in the future, the rental rate of these services would increase. Now the price of *computers* can be represented as the total discounted future flow of rent income. With rents up in the future, the price of computers today rises, making investment in computers, processors, etc, more attractive since I = I(P) is a function of price. An expansion in the stock of capital (computers) today (well it would have started yesterday, when it was known that future demand increases), would lead to greater supply of computing at any rent, thus to a lower rental rate of computing.

6. Real wages appear to be higher in larger than in smaller cities in most, if not all, countries. This is because the division of labor and efficiency of production is greater in large cities. (5.4.4, Core 2003)

   False. Use the residential model developed in class.

7. Suppose it costs $200,000 in present value to raise a child to age 19. The government is considering whether to provide $15,000 to subsidize the college education of 18 year olds in order to increase fertility and the number of children that are sent to college. An economist argues that this subsidy is too small relative to the $200,000 cost to either appreciably affect fertility or the number of children sent to college. (Core 2008)

   Uncertain. It is likely to have a small effect on the decision of new parents to have a kid since the $15,000 bonus comes 18 years in the future so its present value is small (about $5,000) so the savings are not that great. This would shift some people on the margin into having a kid, but not that many. It could have a much larger effect on college attendance for those facing the decision. The two costs of college are the fees and forgone time. The fees are pretty large, and if young folks are credit constrained the bonus could lift many more into college.

8. If each firm in an industry uses labor and capital in fixed proportions then there will be no substitution between labor and capital at the industry level. (4.8.4, Core 2004)

   False. I'm assuming that "fixed proportions" means Leontief production, because otherwise there is substitutability at the firm level and if relative input prices change, the industry as a whole will also have substitution. Now if all firms have the same Leontief production function, there will be no industry-level substitution. However, if some firms are capital-intensive and some are labor-intensive, raising the price of labor will a↵ect the marginal cost of labor-intensive firms more than capitalintensive firms. Therefore, they will cut back production more than capital-intensive firms, and it will appear in aggregate that the industry has substituted from labor to capital

9. An increase in the property tax rate will increase the rental price of housing (inclusive of the property tax) in both the short run and the long run. (4.22.7, GSB Final 1999)

   Uncertain. In the very short-run, rental price will not change since the supply would not be changed. Thereafter, supply of housing will fall gradually, causing rental prices to rise until they reach their highest level in the new steady state.