

Due: Wednesday, September 22

1. Ringo drives a Rolls Royce that gets very low gas mileage. He would like to purchase 100 liters of gasoline per week at the current price of £1.5 per liter. The £1.5 per liter price, however, is the result of a government-imposed price ceiling, and so Ringo is only able to get 50 liters per week. Draw a budget constraint-indifference curve diagram that is consistent with Ringo's current situation. (Hint: Ringo's weekly income is £300 and he only consumes one other good, AOG, where $P_{AOG} = £1$.)
2. Mick falls in love with Jerri, and they marry and have kids, hoping to live happily ever after. Mick and Jerri's household income is \$100 per month. Let's imagine that they consume a composite good, AOG, and health care, HC. The per unit price of AOG is \$1, and the per unit price of HC is \$5. Under these conditions they consume 9 units of HC each month.
 - a) Illustrate this initial situation with an indifference curve and budget constraint in a diagram.
 - b) Now Parliament passes a health care act that subsidizes the purchase of health care by low-income households. The subsidy lowers the price to qualifying households from \$5 to \$3, with government paying the other \$2 per unit consumed. Mick and Jerri increase their consumption to 15 units of HC per month. Illustrate with a new indifference curve and budget constraint.
 - c) How much will this program cost taxpayers to assist a family like Mick and Jerri? Show how that dollar amount can be represented in your diagram.
 - d) Suppose that instead of subsidizing the price of health care, the government decides to give them the equivalent dollar amount as an unrestricted cash grant. In other words, they get a monthly lump-sum transfer equal to the amount you calculated in (c). Will Mick and Jerri prefer this program to the original subsidy approach? Briefly explain.
3. Noah Fect has the following utility function for beer (B) and soft drinks (S):
$$U = S + \ln(B).$$
 - a) Suppose Noah has \$6 to spend on beer and soft drinks and $P_B = \$1$ and $P_S = \$2$. How much of each will he buy? Suppose he has \$8 to spend. How much of each will he buy? Illustrate in a diagram with budget constraints and indifference curves.
 - b) How much utility will Noah get in each case?
4. Ronald McDonald's utility function is given by $U=Y^8F^2$, where F is food consumption and Y is the composite good. Ronald's income is \$500, the price of Y is \$1, and the price of Food is \$2.
 - a) How much F and how much Y will Ronald consume if he is maximizing utility? What is his level of utility? Illustrate in a diagram.
 - b) Ronald qualifies for a \$200 cash grant from the government, bringing his income up to \$700. Answer the same questions as in (a). Illustrate.
 - c) Suppose that instead of giving Ronald \$200 in cash, government instead gives Ronald \$200 worth of food stamps. These enable Ronald to purchase food but cannot be spent on anything else. Illustrate the change in Ronald's budget constraint, and show the consumption bundle and associated indifference curve that Ronald will choose.
 - d) What is the cash equivalent that Ronald would be willing to accept in place of the \$200 worth of food stamps?