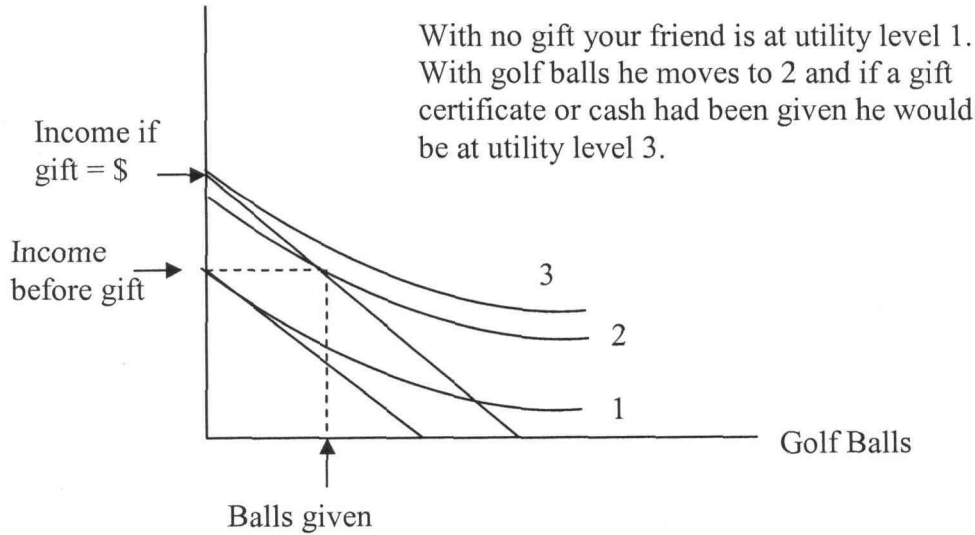
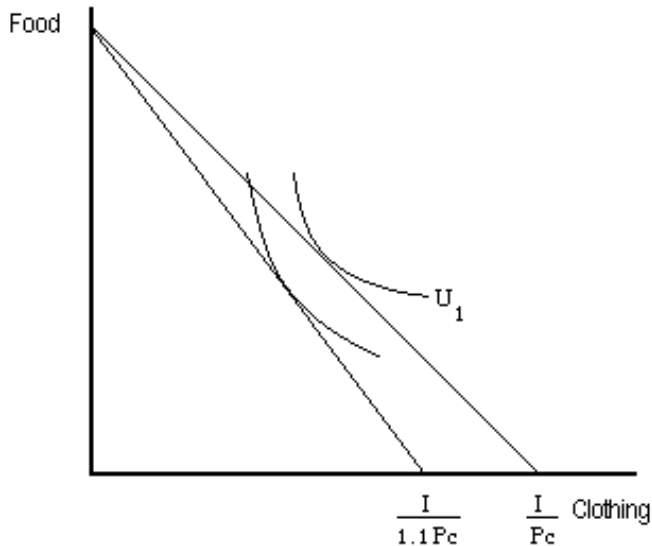


Frank, chapter 3

1. Your friend is a golfer so you buy him several dozen golf balls for his birthday. Although he is appreciative, you sense that he would rather have had a gift certificate at the golf shop. Show this circumstance in a sketch using indifference curves and budget lines.

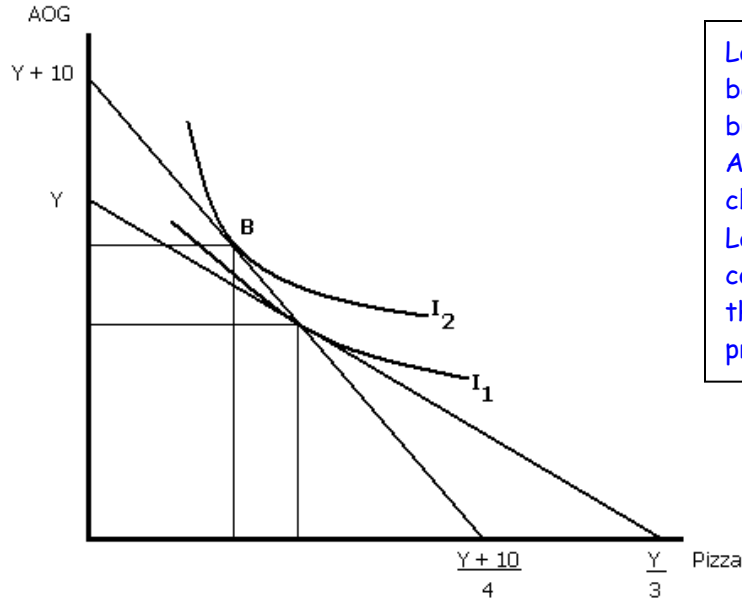


2. In Larry's state, a sales tax of 10% is applied to clothing but not to food. Show the effect of this tax on Larry's choice between food and clothing using indifference curves and budget lines.



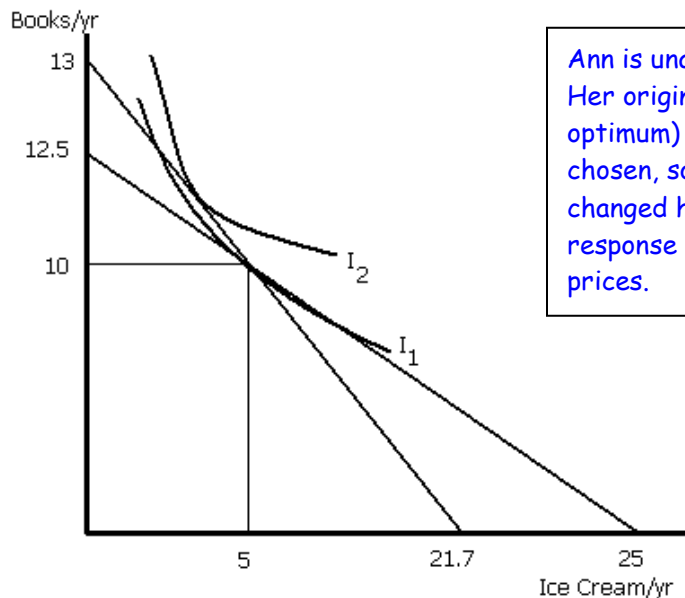
3. Lauren buys pizza slices for \$3 a slice and "all other goods" at a price of \$1 per unit. Her optimal bundle is 10 slices of pizza per week and 30 units of other goods per week. Draw her budget constraint. Label her optimal bundle A and show the relevant indifference curve. The pizzeria raises its price to \$4 a

slice. Her parents give her enough extra money that she can buy her original bundle, A. Draw Lauren's new budget constraint. Can you tell how her new bundle, B, compares to the original one, A?



Lauren is unambiguously better off. Her original bundle (previous optimum) A is still available, but not chosen, so we know that Lauren has changed her consumption in response to the change in relative prices.

4. Ann's only income is her annual college scholarship, which she spends exclusively on gallons of ice cream and books. Last year when ice cream cost \$10 and used books cost \$20, Ann spent her \$250 scholarship on 5 gallons of ice cream and 10 books. This year, the price of ice cream rose to \$15 and the price of books increased to \$25. So that Ann can afford the same bundle of ice cream and books that she bought last year, her college raised her scholarship to \$325. Ann has the usual-shaped indifference curves. Will Ann change the amount of ice cream and books that she buys this year? If so, explain how and why. Will Ann be better off, as well off, or worse off this year than last year? Why?



Ann is unambiguously better off. Her original bundle (previous optimum) is still available, but not chosen, so we know that Ann has changed her consumption in response to the change in relative prices.

5. Last year, the price of heating oil was \$4 per gallon, and Jonetta purchased 100 gallons of heating oil. This year, the price of heating oil falls to \$3 per gallon while Jonetta's income is unchanged. Jonetta decides to share her good fortune by giving her retired father a gift of \$100. Consider an indifference curve-budget line diagram with heating oil on the horizontal axis and "all other goods" on the vertical axis.

a. Does the price change make Jonetta's budget line flatter or steeper? Justify your choice.

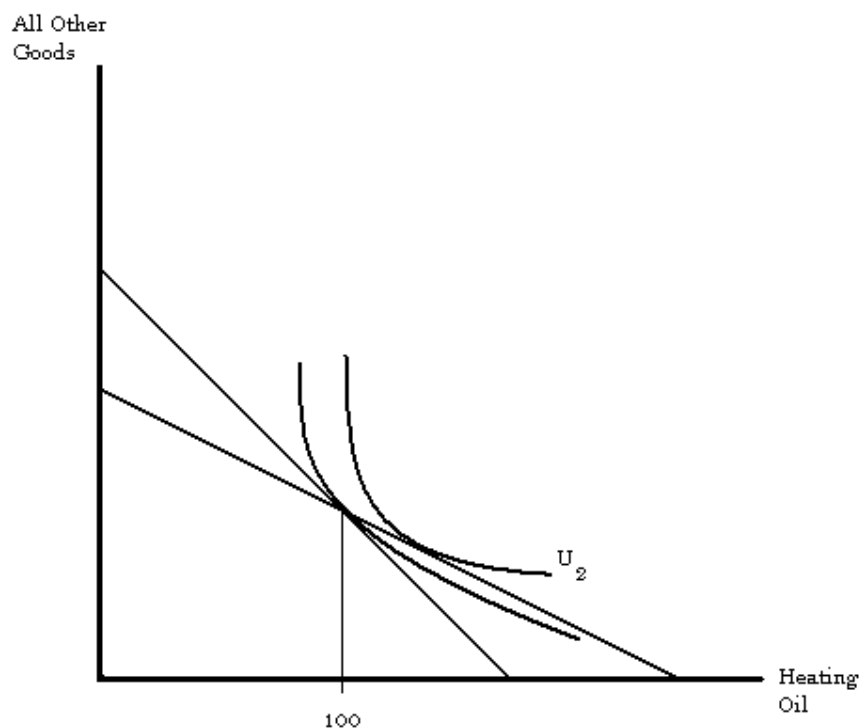
The relative price of heating oil has fallen, so Jonetta's budget line has become flatter.

b. After Jonetta gives the \$100 gift, will her new budget line lie above, lie below, or pass through her initial optimum? Justify your choice.

Last year, Jonetta spent \$400 on heating oil. This year, Jonetta could purchase the same amount of heating oil for \$300; the \$100 gift would allow her to keep her consumption of all other good unchanged from last year. After the gift, Jonetta has just enough income to continue purchasing the same basket as she purchased last year, so her new budget line must pass through her initial optimum.

c. Sketch an indifference curve-budget line diagram that illustrates this situation. This year, will Jonetta be better or worse off than she was last year?

As shown in the accompanying diagram, Jonetta reaches a higher indifference curve, so she is better off this year than she was last year.



12. Since 1979, recipients have been given food stamps. Before 1979, however, people bought food stamps at a subsidized rate. For example, to get \$1 worth of food stamps, a household paid about \$0.25 (the exact amount varied by household characteristics and other factors). What is the budget constraint facing an individual if that individual may buy up to \$100 per month in food stamps at \$0.25 per each \$1 coupon?

