

## Problem Set #4

Sonoma State University

Dr. Cuellar

Economics 305-Intermediate Microeconomic Theory

- (1) The law of demand implies a downward sloping demand function. Under what circumstances could you get an upward sloping demand curve? Explain fully and show graphically using the budget constraint-indifference curve analysis.
- (2) Suppose you consume only two goods, pizza and beer with prices  $P_P = \$10$  and  $P_B = \$5$  and that your income is  $I = \$100$ .
  - (a) Show the effects on the budget constraint of an increase in the price of pizza to  $\$20$  and a decrease in the price of beer to  $\$2.50$ . Put pizza on the y-axis and beer on the x-axis.
  - (b) Use indifference curves to show which consumers will be made better off by the price change in part a.
  - (c) Use indifference curves to show which consumers will be made worse off by the price change in part a.
- (3) Assume that you would like to purchase 50 gallons of gasoline per month at the price of  $\$1.50$  per gallon. However, the  $\$1.50$  price is the result of a government price ceiling, so there is a shortage and you can only get 25 gallons.
  - (a) Show what this situation looks like using indifference curves and the budget line.
  - (b) Show that you would be willing to pay a price higher than  $\$1.50$  to get additional units of gasoline.
- (4) In order to encourage the consumption of schooling, the government provides a fixed quantity subsidy of schooling (k-12) at no direct cost to parents.
  - (a) Show the effects of publicly provided education on the shape of the budget constraint.
  - (b) Show how publicly provided education can decrease the consumption of schooling of a utility maximizing consumer. Explain fully and show graphically.
  - (c) Show how publicly provided education can increase the consumption of schooling of a utility maximizing consumer. Explain fully and show graphically.
  - (d) Show how publicly provided education can have no effect on the consumption of schooling of a utility maximizing consumer. Explain fully and show graphically.
  - (e) How would the imposition of a "voucher" system effect the budget constraint?
  - (f) How would the imposition of a voucher system effect your answers to b-d? Explain each fully and show each graphically.