

Microeconomics for Management - Yossi Spiegel

Problem set 1

Problem 1

Harry has \$5,000 to spend on advertising a new product. Market research shows that people most likely to buy this product are management students and art students. Harry considers advertising in two publications: a boring business magazine and a trendy arts magazine. Ads in the boring business magazine cost \$500 each and read by 1000 management students and 300 arts students. Ads in the trendy arts magazine cost \$250 each and read by 300 management students and 250 arts students. Nobody reads more than one ad and nobody who reads one magazine also reads the other.

- (a) How many management students and how many arts students would read Harry's ads if Harry would have spent his entire advertising budget on the business magazine?
- (b) How many management students and how many arts students would read Harry's ads if Harry would have spent his entire advertising budget on the trendy arts magazine?
- (c) How many management students and how many arts students would read Harry's ads if Harry would have spent half of his advertising budget on the business magazine and the other half on the trendy arts magazine?
- (d) Draw a "budget line" for Harry showing the combinations of the number of readings by management students (on the vertical axis) and by arts students (on the horizontal axis) that he can obtain by spending his entire advertising budget. Does this line extend all the way to the axes?
- (e) Let M be the number of management student and A be the number of arts students who read ads. Based on your answer in (d), write the equation that describes Harry's budget line.
- (f) How many readings by management students must Harry sacrifice to get an additional reading by an arts student?

Problem 2

In class we saw "nice" indifference curves that correspond to preferences that satisfy completeness, transitivity, monotonicity, and convexity. In this question you are asked to draw indifference curves for goods that do not necessarily satisfy the last two assumptions. For each example below, show representative indifference curves, draw an arrow that shows the direction in which the consumer becomes better-off, and determine whether the consumer's preferences satisfy monotonicity and convexity.

- a. Left shoes and right shoes
- b. Water and wine for a person who is not allowed to consume alcohol
- c. Room temperature and bread for a person whose ideal temperature is 20 degrees
- d. Final grade and the amount of work needed in a course you take at the university
- e. 3% milk from Tnuva and from Tara
- f. 1 liter bottles and 2 liter bottles of Coke for a person who is just interested in the total quantity of Coke he consumes

Make sure you label the graphs clearly, and briefly explain in words why the indifference curves have this particular shape.

Problem 3

Joe consumes only apples and bananas. His income is \$12, the price of apples is \$2 per kilo and the price of bananas is \$1 per kilo. Joe can buy any quantity he wants (not necessarily integers).

- (a) Draw Joe's budget line in a graph where the quantity of apples is on the horizontal axis and the quantity of bananas is on the vertical axis.
- (b) Suppose Joe likes to consume 2 kilos of bananas with each kilo of apples. Show on the graph which bundle he would choose and explain why.
- (c) Suppose that the government decides to subsidize apple producers, so that the price of apples to consumers falls to \$1 per kilo. Repeat your answers to parts a and b. How much subsidy does Joe get for the apples he buys?
- (d) Now suppose that instead of subsidizing apple producers directly, the government pays Joe back \$1 for every kilo of apples he buys. That is Joe buys apples at a price of \$2 per kilo but then he send the receipt to the government and gets back a check with \$1 for each kilo of apples he bought. How does your answer in c changes as a result of this new scheme? Carefully explain your answer.
- (e) Instead of a subsidy, the government decides to provide Joe with a voucher worth \$3 which he can use only for buying apples (recall that Joe still has an income of \$12 in addition to the voucher). Repeat your answer in parts a and b.

- (f) Which scheme would Joe prefer: indirect subsidy as in c, direct subsidy as in d, or vouchers as in e?