# Микроэкономика 1 — МИЭФ, demo midterm

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PROBLEM 1

## Short questions — 50 points

**(a) (10 points)** "Short-run average total cost, $SATC$, is decreasing when

$$SMC < SATC$$

and increasing when

$$SMC > SATC.$$

True or false? Explain.

**(b) (10 points)** "In the short run, a competitive firm would never produce where the average variable cost curve is downward sloping."

True or false? Explain.

**(c) (10 points)** "Suppose the income-consumption curve, with good $X$ on the horizontal axis and good $Y$ on the vertical axis, is upward sloping over some range of incomes. Then good $X$ is inferior over that range of incomes."

True or false? Explain.

**(d) (10 points)** The quantity of good $X$ demanded at price $p$ is

$$q_D = 30 - 3p,$$

and the supply schedule is

$$q_S = 6p.$$

The government imposes a per-unit tax at rate $t$, collected from buyers.

Find:

1. the smallest tax rate that results in no units of good $X$ being bought or sold;
2. the resulting deadweight loss.

**(e) (10 points)** Define the concept of a **sunk cost**.

Can a firm's economic profit exceed its accounting profit when sunk costs are present? Explain carefully.

PROBLEM 2

## Consumer choice — 50 points

**(a)** Susan has £12 to spend on bread and cheese. One bread roll costs £1, and one 500-gram block of cheese costs £3.

**(i) (6 points)** Draw Susan's budget constraint and one possible indifference curve.

Explain the assumptions behind the shape of the indifference curve you draw.

**(ii) (6 points)** Suppose the price of bread falls to £0.80 per roll.

How will this affect Susan's purchases of bread and cheese?

Answer verbally and graphically. Clearly identify the income and substitution effects, assuming that bread is an inferior but ordinary good.

**(b)** Susan again has £12. One bread roll costs £1, and one 500-gram block of cheese costs £3.

Suppose Susan only enjoys bread rolls and cheese blocks when they are consumed in a one-to-one proportion.

**(i) (8 points)** Draw Susan's indifference curves.

How much bread and cheese should she buy to maximize her utility?

**(ii) (10 points)** Suppose the price of cheese falls to £2 per block.

How does Susan's consumption of cheese change?

Decompose the total change into income and substitution effects. Illustrate the decomposition graphically and explain the result.

**(c)** Susan grows 100 potatoes each year, and all of her income comes from selling them. She spends all of her income on potatoes and other goods.

For Susan, potatoes are a Giffen good: holding her income fixed, her consumption of potatoes rises when their price rises.

Now suppose the price of potatoes falls and Susan consumes more potatoes.

**(i) (15 points)** Explain how the last statement can be consistent with the preceding assumptions.

**(ii) (5 points)** Illustrate Susan's initial choice and new choice.

Decompose the total change in potato consumption into the substitution effect and the income effect.