

Problem Set 1

1.

You received a free ticket for a musical tonight. The regular price of this ticket is €70. On the radio you just heard that your favorite band is also playing tonight at the Arena. A concert ticket costs €25. A friend offers to buy your musical ticket for €50 so that you can go to the concert instead. If ticket prices for both events were the same, you would prefer the concert of your favorite band. Should you sell your musical ticket and buy a ticket for the Arena instead? How does your answer change if the Arena ticket also cost €70?

2.

Mr. Schmidt recently had to decide whether to become an economics professor with an annual salary of €90,000 or a safari guide with €80,000 per year. After careful consideration, he chose the safari job. Afterwards, however, he said: “For one euro more I would have decided differently.” Recently, his brother-in-law offered him a position in his company under the following conditions:

- Mr. Schmidt must quit his safari job in order to work full-time at the company.
- Mr. Schmidt must grant his brother-in-law an interest-free loan of €200,000, which will only be repaid once Mr. Schmidt leaves the company (Mr. Schmidt currently has much more money in the bank).
- The company pays Mr. Schmidt a salary of €100,000 per year.

The interest rate is 5% per year. Mr. Schmidt finds working in the company exactly as enjoyable as working as a university professor. For simplicity, assume there is no uncertainty about the company’s returns, and also no uncertainty about whether his brother-in-law repays the loan. Will he accept the offer? What is the minimum salary at which he would accept it? How does your answer change depending on whether Mr. Schmidt is deciding to join the company for one year only versus staying at the company for longer?

3.

The final grade in a course is based on the average of six equally weighted exams. Each exam is graded from 0 to 100. For one student, the average has unfortunately deteriorated from 90 to 88, then to 84, 81, and now to 79. What were the grades on the individual exams so far? You still have a final exam ahead of you with the same weight as the other exams. What is the highest final grade (course average) you can still achieve?

4.

Tom runs a small fishing fleet with three boats and currently his daily operating costs are €100 per boat. His daily revenue is €600, i.e., €200 per boat. Should Tom acquire an additional boat?

5.

Now consider the following table of Tom's *daily* revenues from Question 4. Fill in the missing entries. Should Tom send out a fourth boat?

Table: Daily revenues in Tom's fishery			
Number of boats	Total revenue	Average revenue	Marginal revenue
0	0	0	0
1		300	
2		240	180
3	600	200	
4	640		

6.

Determine whether the following statements are positive or normative:

- If the EU abolishes import tariffs on herring and mackerel, the prices of these fish will fall.
- A cold spell in Spain will lead to an increase in the price of orange juice.
- To raise additional government revenue and reduce the budget deficit, the government should increase taxes on alcoholic beverages, tobacco products, and gambling, but not income taxes.
- If the tobacco tax increases by 1% of the gross sales price, then the price of cigarettes will rise by 50 cents per pack.
- Agricultural subsidies are too high and should be reduced over the next decade.