

All exercises have equal weight

Exercise 1

Explain briefly what is meant by:

- a) Opportunity cost
- b) The law of small numbers
- c) Sunk cost
- d) Confirmation bias
- e) Ambiguity aversion

Exercise 2

You try to determine whether a coin is normal or with two heads. (A normal coin has heads and tails on either side.) You can only see the outcome of flips. You believe it is a 10 % probability that the coin has two heads.

- a) The first flip is heads. What is now your probability that the coin has two heads?
- b) The second flip is also heads. What is now your probability that the coin has two heads?
- c) The third flip is tails. What is now your probability that the coin has two heads?

Exercise 3

Per has a value function equal to $v(x) = -x^2$ for losses and $v(x) = x$ for gains, where x is change in income. He considers whether to buy a ticket in a lottery.

- a) Suppose the ticket costs 100 kroner, and the probability of winning a million kroner is 0.0001 (one in 10,000). Will he buy a lottery ticket?
- b) What must the probability of winning be if Per shall be indifferent between buying and not buying a lottery ticket?

Per must also decide whether to insure his house against fire.

- c) The house is worth one million kroner and becomes worthless after a fire. A full-value insurance (which gives him one million kroner in case of fire) costs 100 kroner. The probability of fire is 0.001 (one in 1000). Will Per buy insurance?

Exercise 4

Consider a game where two players move once and simultaneously. Player 1 can decide between U and D, whereas player 2 can decide between L and R. The payoff matrix is as follows:

	L	R
U	2,1	0,0
D	0,0	1,2

The first number in each cell is the payoff of player 1, and the second number in the cell is the payoff of player 2.

Which Nash equilibria exist in this game?