

Exam SØK2012 V20

The grade is based on an overall assessment.

1. Imagine that Hip and Hop had bought stocks in the same company. When they bought the stock, it was worth 1. It later rose to 10, but then dropped to 2.
 - (a) To evaluate their gains and losses, Hip and Hop both have the value function: $v(x) = x/2$ for gains and $v(x) = 2x$ for losses. Explain what phenomenon the value function is meant to capture through its properties.
 - (b) Hop uses the peak price (10) as her reference point. In terms of value, how much would she say that she lost when the price dropped from 10 to 2? Explain your answer.
 - (c) Hip uses the original price (1) as his reference point. In terms of value, how much would he say that he lost when the price dropped from 10 to 2? Explain your answer.
 - (d) Who is more disappointed when the price drops, and why?
2. What is the heuristics and biases program? Give relevant examples of the elements of the program.
3. Let us say that you only get utility of doing exercises and are facing a choice between A (1 exercise today), B (3 exercises tomorrow), and C (4 exercises in two days). You must choose one and only one of the three alternatives.
 - (a) Explain what phenomena exponential and hyperbolic discounting are meant to capture in this context.
 - (b) If you are an exponential discounter, with $\delta = 1/2$, what do you choose? Explain your answer.
 - (c) If you are a naive hyperbolic discounter, with $\beta = 1/2$ and $\delta = 1$, what do you choose? Explain your answer.
 - (d) If you are a sophisticated hyperbolic discounter, with $\beta = 1/2$ and $\delta = 1$, what do you choose? Explain your answer.
4. Suppose that Alexa's utility function is $u(x) = x^2$ and that she is facing the following gamble: 1/4 probability of winning 36 and 3/4 probability of winning 8.

- (a) What is the expected value of the gamble? Explain your answer.
- (b) What is the expected utility of the gamble. Explain your answer.
- (c) What is the certainty equivalent of the gamble. Explain your answer.
- (d) What is her attitude towards risk? Explain your answer.
5. Suppose that the weather is nice this morning, but there are also clouds gathering. Let us also assume that there is a 10% probability of rain on days this month. However, If it does rain, there is a 90% probability there are clouds in the morning. But on days with no rain, there is a 20% probability of clouds in the morning.
- Since clouds are gathering, what is the probability it is going to rain? Explain your answer.
6. Consider the following game :

	<i>Left</i>	<i>Right</i>	
<i>Up</i>	3, 3	0, 2	}
<i>Down</i>	2, 0	1, 1	

- (a) Explain the concept of Nash equilibrium and compute all Nash equilibria in pure strategies.
- (b) There is also an equilibrium in mixed strategies. Compute the probability p with which Player 1 plays U. Explain your answer. Compute the probability q with which Player 2 plays L. Explain your answer.
7. Odometer values are key attributes of used cars. Members of a research group observe sales prices in the used car market. They observe that the average price drop per 1000 km when the odometer value pass through the 10,000-km thresholds amounts to EUR 367.33 compared to an average price decrease between thresholds of EUR 63.26 per 1,000 km. Use your insight from behavioral economics to explain this phenomenon.