Decision making under risk and uncertainty

Reflections:
a) Do we know the probability ?
b) Are we afraid of the risk ?
c) Why do we insure ourself and what does it bring?

Based on which theory and principle are the consumers deciding ?

Draw the graph of decision analysis , cardinal approach , consumer´s aversion to risk.

1. Determine the expected result , if you know that the consumer is likely to win 25% of CZK 10,000 , with a probability of 40 % to win 20,000 CZK 35 % as likely to win 30,000 CZK . Calculate the expected result of the winnings.

2. The consumer can decide whether to play or not to play the game . If he doesn't play , his pension will be 500 CZK. If he does play , there are two alternatives: the value of pensions 300, - CZK with pst 0.6 or the value of retirement in 1000 CZK with pst 0.4. The function of benefit of the specific variation is given by
$U (I) = 500I - 0.2 I^2$.
specify:
a) The expected pension
b) Decide whether he plays or not
c) Derive the connector variants
c) Display graphically

3. Consumers can win 500 CZK or 1000 CZK during a game . The function of benefit of the specific variation is given by $U (I) = 600i - 0.5 I^2$. Calculate:

a) What is the value of the expected income (winnings)
b) What is the expected benefit of the bet
c) What is the value of the benefit due to the expected result

4. Uwe Filter owns a car worth 400,000 CZK and 100,000 CZK in the bank . The probability of the car being stolen is 0.1 . Calculate the value of the expected wealth. In addition, calculate the value of the fair insurance policies. Display graphically as well the value of the most acceptable premium.

5. Consumer owns a cottage worth 100,000 CZK . The cottage is built in an area with a 20 % probability of risk of flooding . In case the floods occur, the damage is in the amount of CZK 80,000 . What is the amount of the fair insurance policies ?

Insurance	Flood		Expected wealth
	yes (20%)	no (80%)	
yes	?	?	
no	20000	100000	*

6. Let´s assume that an investor has a choice between three business activities, whose pst and incomes are in the chart below.

	1	2	3
Probability	0,2	0,4	0,4
Profit	100	50	-25

Calculate:
a) The expected value of this uncertain investment
b) The dispersion of the values

7. Information which are reducing the risk.
You have the following situation: an artwork offered for 1 million. CZK. There is no guarantee that it is authentic. For authenticity, is the value of the artwork 3 million CZK. If the artwork is fake, the value is only 0.2 million CZK. The probability of the artwork being authentic is 0.1. The consumer has the possibility to purchase an expert´s opinion. Draw schematically this situation and give the equation for value of the prize for the expert´s opinion.

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