Business Decision Making **Summer semester 2012**
(20115) **31. July 2012**

Name: . . . . . .

Student identification number: . . . . . .

This exam consists of this answer sheet and eight questions on the following pages. It is not allowed to open the binding. Please do not forget to enter your name and student identification number above.

For each of the eight questions you can choose between four different answers, of which only one is correct. Please note that a correctly answered question will be valued higher than an unanswered question, but that an unanswered question will be valued higher than an incorrectly answered question.

Only the answer box below is used as the basis for grading. The numbered columns in the answer box correspond to the numbered exam questions. Each row, characterized by letters A-D, represents an alternative answer to the respective exam question. Please mark your answers carefully by completely filling in the corresponding circle. If no circle is marked, the question will be considered as unanswered. If more than one circle is marked, the answer will be considered as incorrect. If corrections are necessary, please indicate them clearly on this answer sheet.

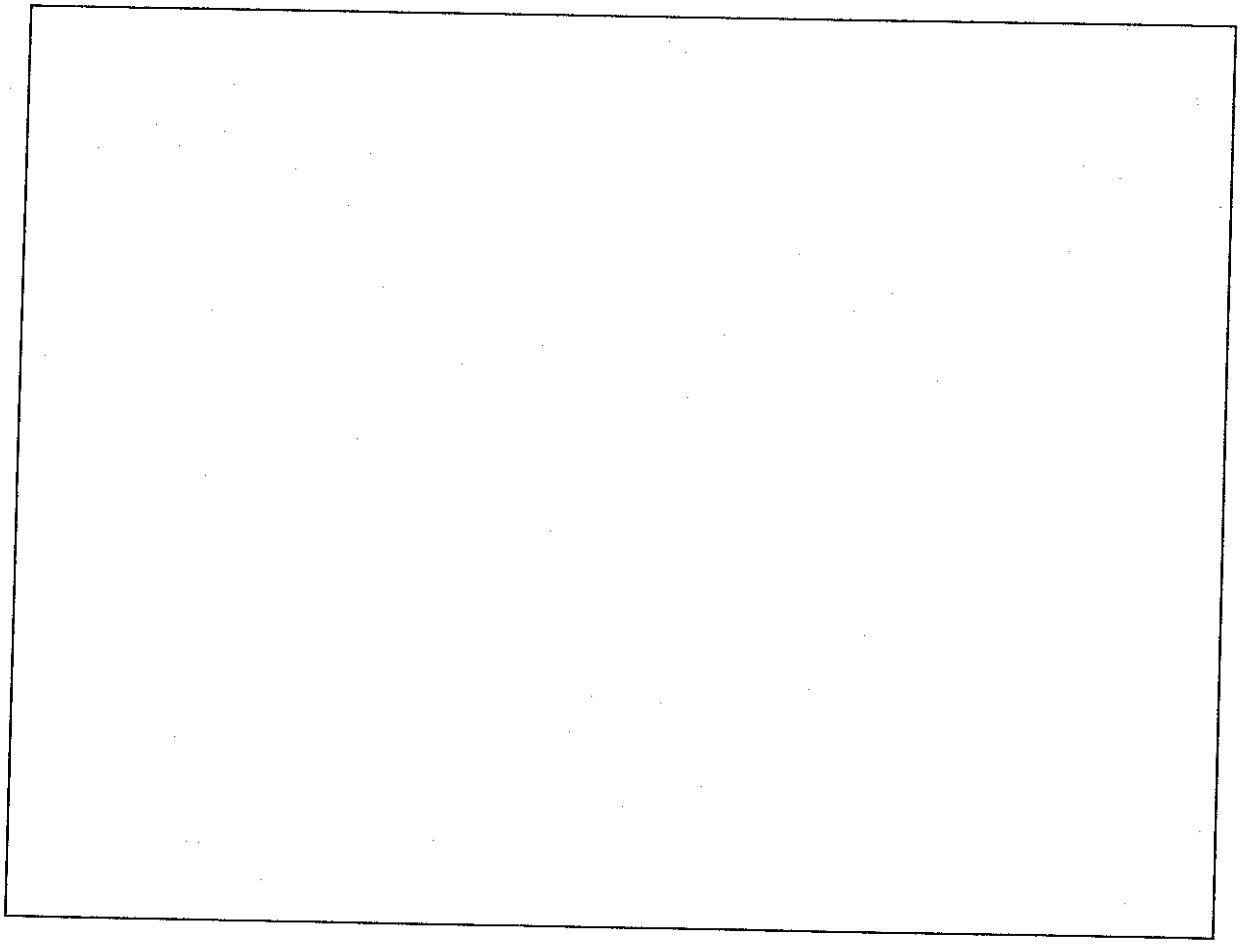
Admitted Aids: Non-programmable pocket calculator;
Dictionary without handwritten notes.

Answer box								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
A	O	O	O	O	O	O	O	O
B	O	O	O	O	O	O	O	O
C	O	O	O	O	O	O	O	O
D	O	O	O	O	O	O	O	O

Question 1:

Consider the following four lotteries:
A = {(110, 0.25), (120, 0.5), (130, 0.25)}
B = {(100, 0.25), (130, 0.5), (120, 0.25)}
C = {(110, 0.25), (120, 0.5), (110, 0.25)}
D = {(100, 0.25), (110, 0.5), (130, 0.25)}
A decision maker is known to hold the following indifferences with the reference lotteries
110 □ {(130, 0.5), (100, 0.5)}
120 □ {(130, 0.8), (100, 0.2)}
With this information, which of the four lotteries should the decision maker choose in order to maximize expected utility?

a) A
b) B
c) C
d) D



Question 2:

A team of scientists will carry out research over six months in Antarctica. One major piece of equipment they need is subject to breakdowns caused by the sudden failure of a particular component. Because a failed component cannot be repaired, the team intends to carry a stock of spare units of this component, but it will cost them roughly $3000 for each spare unit they take with them. However, if the equipment breaks down and a spare is not available, a new unit will have to be specially flown in, and the team will incur a total cost of $5000 for each unit that is delivered in this way. The number of spares required will not exceed three.
How many extra-spares should the team carry with them if their objective is to minimize costs and they decide according to the Laplace Rule?

a) 0
b) 1
c) 2
d) 3

Question 3:

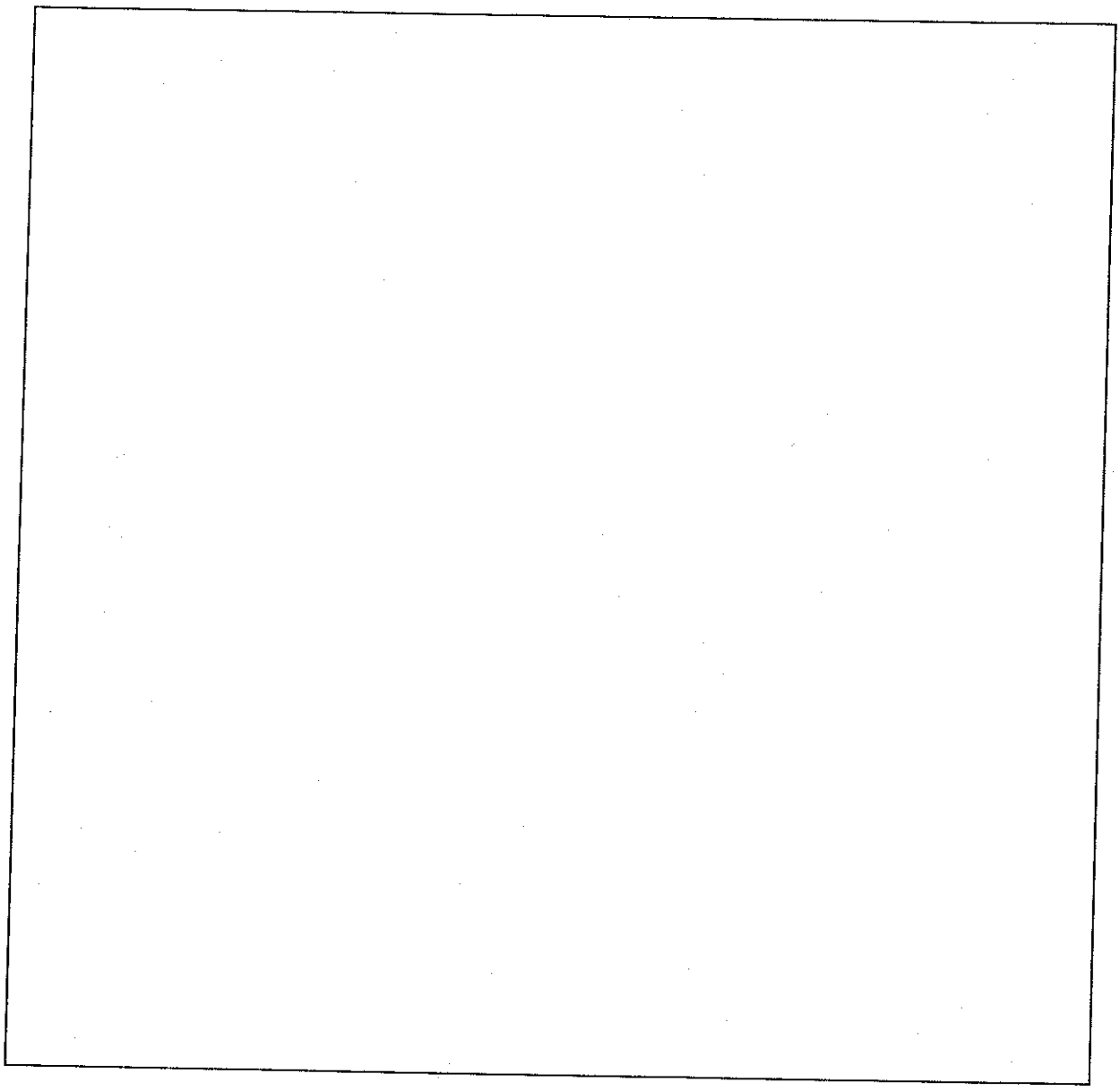
Imagine that someone offers you to participate in a game with a maximum of four rounds of statements, to which you must respond only 'true' or 'false'. If your response is correct, you receive $10 for the first round and additionally: $20 for the correct second answer, $30 for the correct third answer and additional $32.74 if you respond correctly to the fourth statement. Whenever you answer one question incorrect the game is over and you end up with the money you earned up to that point. Since you do not know the next statement beforehand, you consider guessing in all rounds, so that your chance of a correct response is always 50%. Assume that your preferences can be described best by the utility function $U(x) = x^2$, where x represents the actual payoff. What is your maximum willingness to pay for the participation in this game?

a) € 14
b) € 25
c) € 30
d) € 42

Question 4:

Which of the following four statements concerning different decision strategies is correct?

a) Even Swaps, Elimination by aspects and the Satisficing Principle belong to the non-compensatory decision strategies.
b) A Semi-lexicographic Strategy always delivers an intransitive result.
c) For Elimination by Aspects the outcome is always independent of the ordering of aspects.
d) The Even Swap Method is based on an additive and separable value function.



Question 5:

Mira and Kevin have to divide five items among each other. The following table contains the subjective valuations of all items for both:

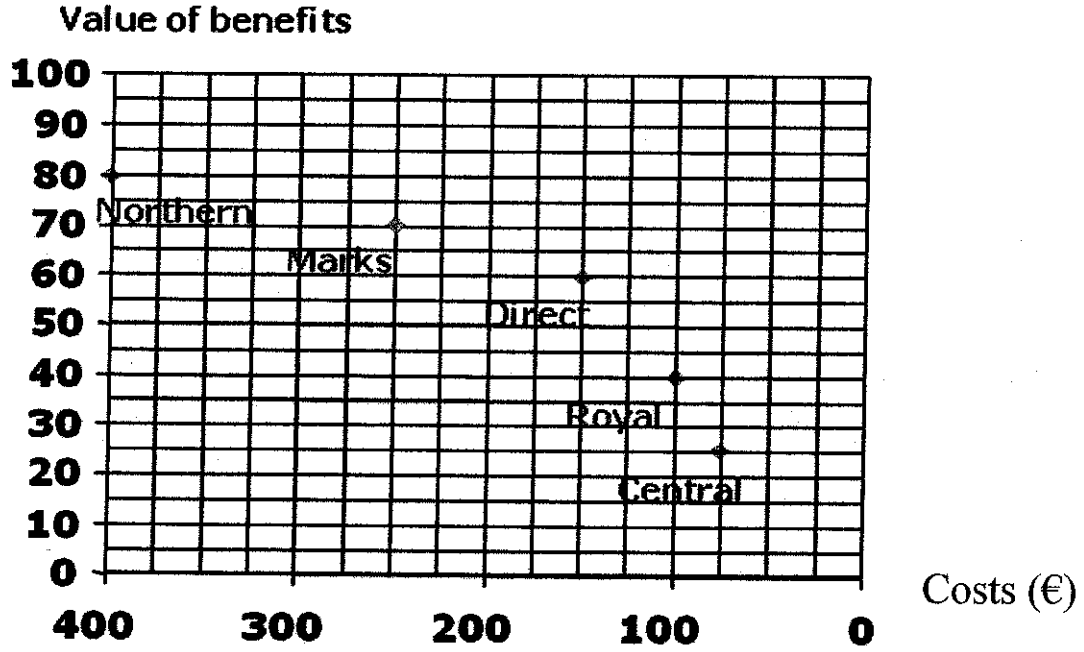
Item	***Mira***	***Kevin***
Scooter	2000	700
Piano	300	2000
Music box	600	300
Lawn-mower	2000	1000
Books	250	600

Suppose that Mira and Kevin agree on applying the procedure "Divide and Choose". If Kevin is in the role of the Divider, what is his maximum willingness to pay for perfect information on Mira's preferences?

a) € 1 300
b) € 2 300
c) € 3 600
d) € 2 600

Question 6:

For the location of a new supermarket a manager has five alternatives. In addition to the costs, he considers several benefit attributes which are already aggregated using the SMART-Method. All alternatives are depicted in the following figure together with their performances in the two remaining criteria.

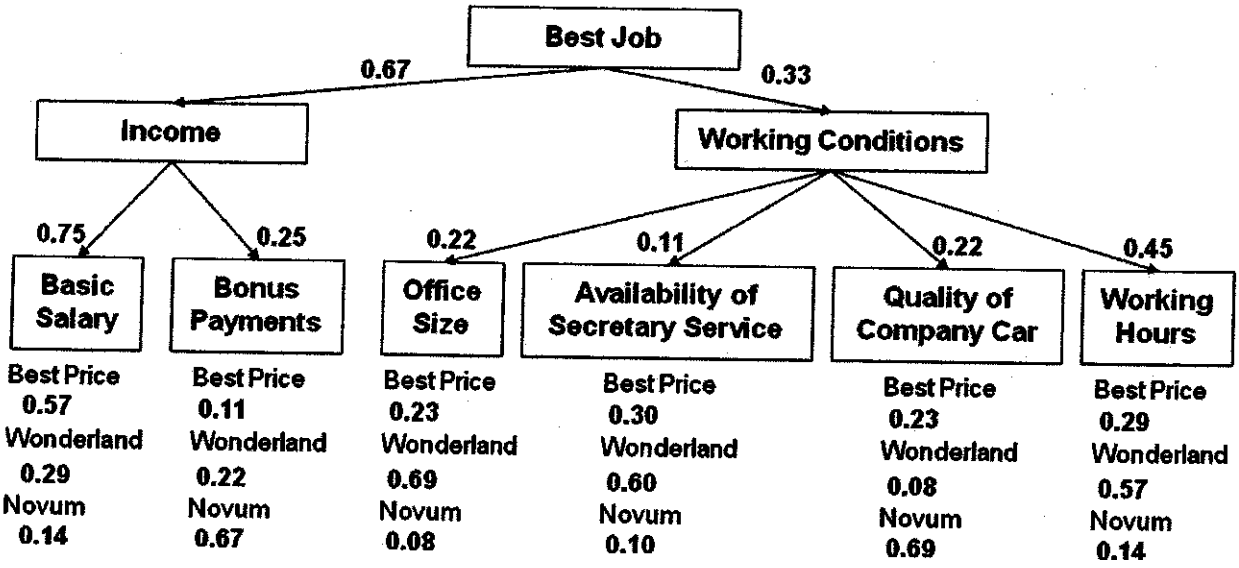


Which location is chosen if the manager has linear preferences and is willing to pay 50 € to receive 4 additional benefit points?

a) Northern
b) Marks
c) Direct
d) Central

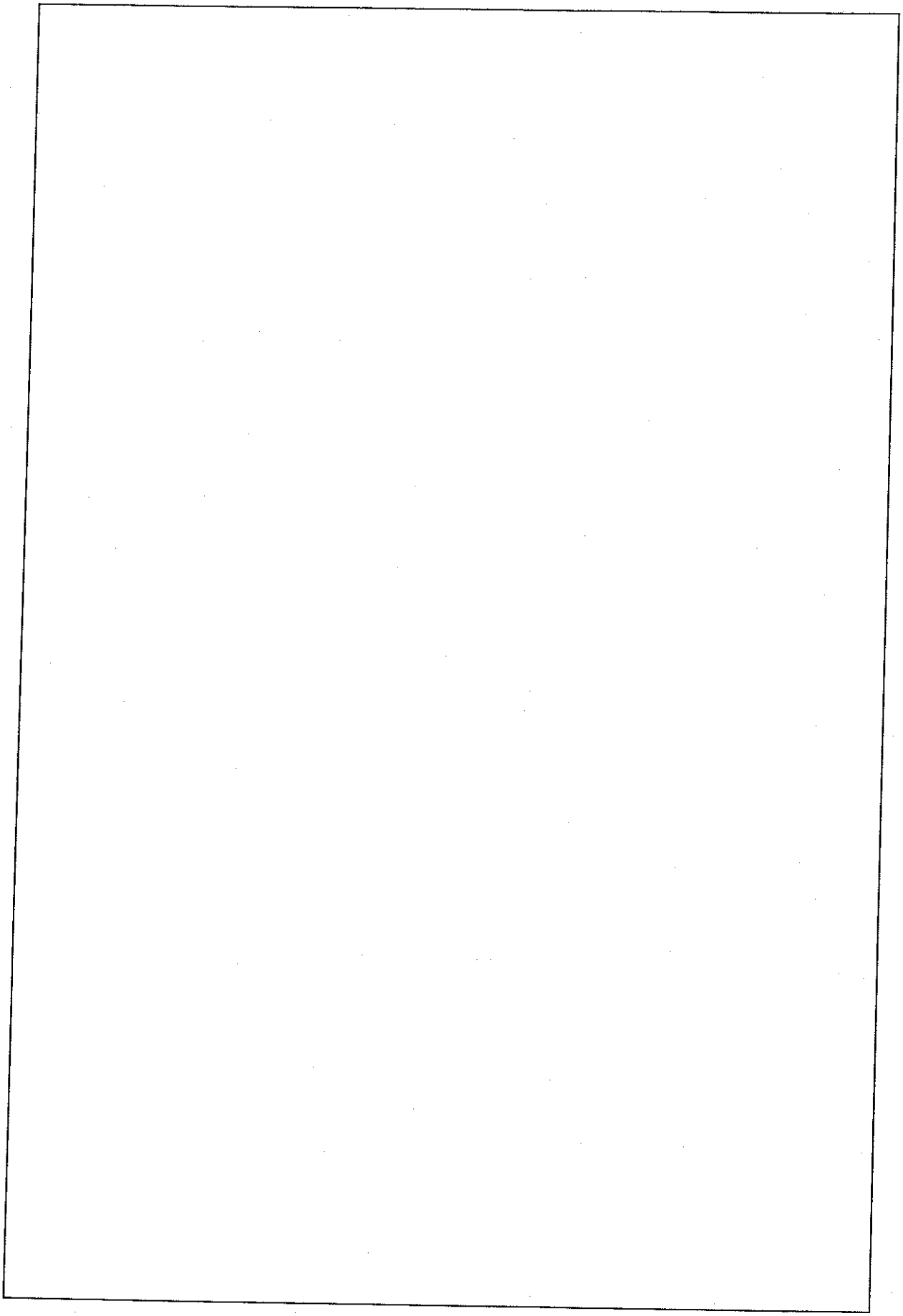
Question 7:

In order to find the best job you have to compare the alternatives BestPrice, Wonderland and Novum with the help of the Analytical Hierarchy Process. Your problem is characterized by the following hierarchy, where the values below the alternatives describe their performances in lowest-level sub-criteria and all other values represent relative weights of sub-criteria.



Given these values BestPrice is the optimal alternative. But you are uncertain about the relative importance of Income and Working Conditions. How will this influence the optimal choice?

a) Wonderland is the optimal choice for a relative weight on income of $[0, 0.55]$.
b) All three alternatives can become the best alternative.
c) BestPrice will always be the best choice.
d) You can be indifferent between Novum and Best Price.



Question 8:

Alex and Olga want to negotiate over the items, which are stated in the following table together with their subjective value of all items measured in €. Both agree to apply the Knaster-Steinhaus-Procedure. What is the resulting transfer payment?

	Item	Olga	Alex
1	PC	2.000	600
2	Bike	2.000	600
3	guitar	300	2.000
4	Microwave	1.500	2.000
5	Washing machine	600	400
6	Diving suit	300	600
7	Coin collection	3.000	1.000
8	Lada	2.000	1.800
	Overall value	**11.700**	**9.000**

a) € 1 925
b) € 1 825
c) € 1 285
d) € 1 875