ISM-E1004 - Business Analytics 2, Lecture, 8.1.2024-19.2.2024

To make sure all answers are saved always finish your attempt before time is up!
Time left 2:52:13

Question 1

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The following list contains statements that are either true or false. Which of the statements are true?

Grading: each incorrect answer eliminates the points of one correct answer.

Select one or more:

- [ ] A certain optimisation problem has a convex objective function and its decision variables are integer valued. Such an optimisation problem is classified as a convex problem.
- [x] The Expected Value of Sample Information cannot be larger than the Expected Value of Perfect Information.
- [x] The Law of Total Probability relates marginal probabilities to conditional probabilities.
- [ ] Multiattribute Value Theory (MAVT) always assigns equal weigths to all attributes.
- [ ] The independence axiom of Expected Utility Theory (EUT) is based on empirical observations of how people will choose in different situations.
- [ ] If *X* dominates *Y* in the sense of First-degree Stochastic Dominance and *Y* dominates *Z* in the sense of First-degree Stochastic Dominance, then *Z* dominates *X* in the sense of First-degree Stochastic Dominance.
- [x] The Conditional Value-at-Risk measure $CVaR_{\alpha}[X]$ describes the expected value of random variable X on the condition that this value is lower than or equal to $VaR_{\alpha}[X]$.
- [x] A decision maker with a strictly convex utility function is classified as risk-seeking in the sense of Expected Utility Theory.
- [ ] If *X* dominates *Y* in the sense of First-degree Stochastic Dominance, then the cumulative distribution function of *X* can be strictly above the cumulative distribution function of *Y* at some points.
- [x] For a decision maker with a linear utility function, the certainty equivalent of a random variable equals the expected value of the random variable.
- [ ] The cumulative distribution function $F_X(x)$ denotes the probability that the value of random variable X is greater than or equal to x.
- [ ] Value-at-Risk 10% for a normally distributed random variable does not depend on the mean of the random variable, only on its variance.

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