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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. The decision-making concepts covered in *Data Analysis & Decision Making* book include which of the following?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | Optimization techniques | b.  | Decision analysis with uncertainty |
|   | c.  | Structured sensitivity analysis | d.  | All of these options |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 2. Which of the following statements is *not* true?

|  |  |  |
| --- | --- | --- |
|   | a.  | Dealing with uncertainty includes measuring uncertainty. |
|   | b.  | Dealing with uncertainty includes modeling uncertainty explicitly into the analysis. |
|   | c.  | Dealing with uncertainty includes eliminating uncertainty by using the normal probability distribution. |
|   | d.  | Uncertainty is a key aspect of most business problems, and dealing with uncertainty requires a basic understanding of probability. |

|  |  |
| --- | --- |
| *ANSWER:* | c |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3. Which of the following is *not* one of the important themes of your *Data Analysis & Decision Making* book?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | Data analysis | b.  | Dealing with uncertainty |
|   | c.  | Decision making | d.  | Data mining |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4. Data analysis includes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | data description | b.  | data inference |
|   | c.  | the search for relationships in data | d.  | All of these options |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 5. Which of the following is *not* one of the steps in the modeling process?

|  |  |  |
| --- | --- | --- |
|   | a.  | Select scale for model. |
|   | b.  | Collect and summarize data. |
|   | c.  | Verify the model. |
|   | d.  | Present the results to the organization. |
|   | e.  | Implement the model and update it over time. |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 6. Which of the following would *not* be included under data analysis?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | Measuring uncertainty | b.  | Data description |
|   | c.  | Data inference | d.  | Search for relationships |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7. The decision-making process includes

|  |  |  |
| --- | --- | --- |
|   | a.  | optimization techniques for problems with no uncertainty |
|   | b.  | decision analysis for problems with uncertainty |
|   | c.  | structured sensitivity analysis |
|   | d.  | All of these choices |

|  |  |
| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8. Which of the following is *not* one of the types of models described in *Data Analysis & Decision Making* book?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | a.  | Algebraic model | b.  | Spreadsheet model |
|   | c.  | Scale model | d.  | Graphical model |

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| --- | --- |
| *ANSWER:* | c |

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| 9. The modeling process discussed in *Data Analysis & Decision Making* book is a

|  |  |  |
| --- | --- | --- |
|   | a.  | seven-step process |
|   | b.  | six-step process |
|   | c.  | five-step process |
|   | d.  | four-step process |
|   | e.  | three-step process |

|  |  |
| --- | --- |
| *ANSWER:* | a |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 10. Which of the following is an Excel add-in for performing what-if analyses?

|  |  |  |
| --- | --- | --- |
|   | a.  | PrecisionTree |
|   | b.  | TopRank |
|   | c.  | Solver |
|   | d.  | @Risk |
|   | e.  | StatTools |

|  |  |
| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 11. Which of the following statements are false?

|  |  |  |
| --- | --- | --- |
|   | a.  | The modeling process discussed in *Data Analysis & Decision Making* book is five-step process. |
|   | b.  | Dealing with uncertainty requires a basic understanding of probability. |
|   | c.  | Uncertainty is a key aspect of most business problems. |
|   | d.  | Data description and data inference are included under data analysis. |

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| --- | --- |
| *ANSWER:* | a |

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| 12. Which of the following statements are false?

|  |  |  |
| --- | --- | --- |
|   | a.  | Decision-making includes *optimization techniques* for problems with certainty, *decision analysis* for problems with certainty, and structured *sensitivity analysis*. |
|   | b.  | Graphical models can be very helpful for simple problems. For complex problems, however, graphical models usually fail to show the important elements of a problem and how they are related. |
|   | c.  | Dealing with uncertainty includes *measuring* uncertainty and *modeling* uncertainty explicitly into the analysis. |
|   | d.  | All of these options |

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| --- | --- |
| *ANSWER:* | b |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13. Which of the following statements are true?

|  |  |  |
| --- | --- | --- |
|   | a.  | An alternative to algebraic modeling is spreadsheet modeling. Instead of relating various quantities with algebraic equations and inequalities, they are related in a spreadsheet with cell formulas. |
|   | b.  | Data are usually meaningless until they are analyzed for trends, patterns, relationships, and other useful information. |
|   | c.  | Algebraic models, by means of algebraic equations and inequalities, specify a set of relationships in a very precise way. Their main drawback is that they require an ability to work with abstract mathematical symbols. |
|   | d.  | When we make inferences from data and search for relationships in data, or when we use decision trees to help make decisions, we must deal with uncertainty. |
|   | e.  | All of these options |

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| --- | --- |
| *ANSWER:* | e |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 14. Which of the following statements are true?

|  |  |  |
| --- | --- | --- |
|   | a.  | Three important themes run through the book. Two of them are in the title: data analysis and decision making. The third is dealing with uncertainty. |
|   | b.  | Data analysis includes data description, data inference, and the search for relationships in data. |
|   | c.  | Decision making includes optimization techniques for problems with no uncertainty, decision analysis for problems with uncertainty, and structured sensitivity analysis. |
|   | d.  | Dealing with uncertainty includes measuring uncertainty and modeling uncertainty explicitly into the analysis. |
|   | e.  | All of these options |

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| --- | --- |
| *ANSWER:* | e |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15. Which of the following is an Excel add-in for simulation?

|  |  |  |
| --- | --- | --- |
|   | a.  | PrecisionTree |
|   | b.  | TopRank |
|   | c.  | Solver |
|   | d.  | @Risk |
|   | e.  | StatTools |

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| --- | --- |
| *ANSWER:* | d |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 16. Data analysis includes data *description*, data *inference*, and the search for *relationships* in data.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

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| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 17. Decision-making includes *optimization techniques* for problems with certainty, *decision analysis* for problems with certainty, and structured *sensitivity analysis*.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 18. Dealing with uncertainty includes *measuring* uncertainty and *modeling* uncertainty explicitly into the analysis.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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| 19. The authors of the *Data Analysis & Decision Making* book described three types of models: graphical models, algebraic models, and spreadsheet models.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 20. Graphical models are the least intuitive type of model. Its purpose is simply to provide enough quantitative details to enable us solve the problem of interest.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 21. Three important themes run through this book: data analysis, decision making, and dealing with uncertainty.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 22. Graphical models can be very helpful for simple problems. For complex problems, however, graphical models usually fail to show the important elements of a problem and how they are related.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 23. The overall modeling process typically done in the business world always require seven steps: define the problem, collect and summarize data, develop a model, verify the model, select one or more suitable decisions, present the results to the organization, and implement the model and update it over time.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 24. Algebraic models, by means of algebraic equations and inequalities, specify a set of relationships in a very precise way. Their main drawback is that they require an ability to work with abstract mathematical symbols.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 25. Data are usually meaningless until they are analyzed for trends, patterns, relationships, and other useful information.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 26. An alternative to algebraic modeling is spreadsheet modeling. Instead of relating various quantities with algebraic equations and inequalities, they are related in a spreadsheet with cell formulas.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 27. When we use simulation models to help make decisions, we do not deal with uncertainty at all, since we often must make inferences from the simulated data.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 28. When we make inferences from data and search for relationships in data, or when we use decision trees to help make decisions, we must deal with uncertainty.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 29. The @Risk is an Excel add-in that can be used to run replications of a simulation, keep track of outputs, create useful charts, and perform sensitivity analyses.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | True |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 30. Graphical models are probably the least intuitive and most quantitative type of model.

|  |  |  |
| --- | --- | --- |
|   | a.  | True |
|   | b.  | False |

|  |  |
| --- | --- |
| *ANSWER:* | False |

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