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| <b>JSMCase 4</b>    | Along with many other students, prince Mean Chaser, princess Age and princess I-net are students at the college of business at TAMUCC. Often they hold conversations with their dady, King Menalaus of Troy, about their dad's favorite and their hardest subject--business statistics. King Menalaus is well known as a data driven decision maker and he takes pleasure in discovering knowledge about relationships among variables related to students and others who live in his kingdom. King Menalaus and his two daughters and one son had the following conversation recently. |
| Prince Mean Chaser: | The mean score in a business statistics course for all students at TAMUCC is less than 70 out of 100. I am 99% sure about this, Daddy. So, my score of 67 is not all that low.  |
| King Menalaus:      | I wish I could believe you. Can you help me believe you, Prince Mean Chaser? I think the average performance is 70 or higher out of 100.  |
| Princess Age:       | The older a student, the better the student performs in an assessment of statistical knowledge and skills. I am only 18 years old, Daddy, and this is why I scored 65% in business statistics. I am not old enough to do any better.  |
| King Menalaus:      | I will disagree with you on this point, Princess Age, until you support your opinion with data-driven analysis.   |
| Princess I-Net:     | The more a student uses the Internet, the better the student performs in an assessment of statistical knowledge and skills. Since you allow me to spend only twenty five hours per week on the Internet, I scored only 68 in business statistics, Daddy.  |
| King Menalaus:      | I will disagree with you on this point, Princess I-Net, until you support your opinion with data.   |
|                     | Use data from <b>JSMCase1</b> Excel file [in Module 1 folder], to test three hypotheses hidden in the conversation above. Use regression analysis to investigate the relationship between age of a student, Internet usage of a student and performance of a student in an assessment of statistical knowledge and skills.  |
|                     | Prince Mean Chaser, Princess Age and Princess I-net have hired you to help them and they have agreed to pay you 1000 dollars if you help honestly settle their dispute with their daddy. They do not want to win for the sake of winning by any means necessary, they want you to discover the honest truth about how reasonable their beliefs are. Which of their beliefs can be supported with 95% confidence? Which of their beliefs can be supported with 99% confidence?   |
|                     | Use the hypothesis testing procedure described in chapters 9 and or 12, as appropriate, to do your analysis. Discuss your findings. Use scatter diagrams, correlation coefficient $r$ and the regression procedure to honestly settle the dispute in the royal family about the relationship between age and performance in business statistics and Internet usage and performance in business statistics.  |