Business stat essay sample

Economics

3-21 Allen Young has always been proud of his personal investment strategies and has done very well over the past several years. He invests primarily in the stock market. Over the past several months, however, Allen has become very concerned about the stock market as a good investment. In some cases it would have been better for Allen to have his money in a bank than in the market. During the next year, Allen must decide whether to invest $10, 000 in the stock market or in a certificate of deposit (CD) at an interest rate of 9%. If the market is good, Allen believes that he could get a 14% return on his money. With a fair market, he expects to get an 8% return. If the market is bad, he will most likely get no return at all-in other words, the return would be 0%. Allen estimates that the probability of a good market is 0. 4, the probability of a fair market is 0. 4, and the probability of a bad market is 0. 2, and he wishes to maximize his long-run average return.
(a) Develop a decision table for this problem.

(b) What is the best decision?

3-22 In Problem 3-21 you helped Allen Young determine the best investment strategy. Now, Young is thinking about paying for a stock market newsletter. A friend of Young said that these types of letters could predict very accurately whether the market would be good, fair, or poor. Then, based on these predictions, Allen could make better investment decisions. (a) What is the most that Allen would be willing to pay for a newsletter? (b) Young now believes that a good market will give a return of only II % instead of 14%. Will this information change the amount that Allen would be willing to pay for the newsletter? If your answer is yes, determine the most that Allen would be willing to pay, given this new information.

3-28 A group of medical professionals is considering the construction of a private clinic. If the medical demand is high (i. e., there is a favorable market for the clinic), the physicians could realize a net profit of $100, 000. If the market is not favorable, they could lose $40, 000. Of course, they don’t have to proceed at all, in which case there is no cost. In the absence of any market data, the best the physicians can guess is that there is a 50-50 chance the clinic will be successful. Construct a decision tree to help analyze this problem. What should the medical professionals do?

3-40 In Problem 3-28, you helped the medical professionals analyze their decision using expected monetary value as the decision criterion. This group has also assessed their utility for money: U(– $45, 000) = 0, U(-$40, 000) = 0. 1, U(-$5, 000) = 0. 7, U($O) = 0. 9, U($95, 000) = 0. 99, and U($100, 000) = 1. Use expected utility as the decision criterion, and determine the best decision for the medical professionals. Are the medical professionals risk seekers or risk avoiders?

3-42 In the past few years, the traffic problems in Lynn McKell’s hometown have gotten worse. Now, Broad Street is congested about half the time. The normal travel time to work for Lynn is only 15 minutes when Broad Street is used and there is no congestion. With congestion, however, it takes Lynn 40 minutes to get to work. If Lynn decides to take the expressway, it will take 30 minutes regardless of the traffic conditions. Lynn’s utility for travel time is: U(l5 minutes) = 0. 9, U(30 minutes) = 0. 7, and U(40 minutes) = 0. 2.

(a) Which route will minimize Lynn’s expected travel time?

(b) Which route will maximize Lynn’s utility?

(c) When it comes to travel time, is Lynn a risk seeker or a risk avoider?