

Department of Mathematics and Computer Science

Probability and Statistics Challenge Problems 5

*Please submit solutions by Wednesday November 4, at 3pm*

Brett and Margo have each thought about murdering their rich Uncle Basil in hopes of claiming their inheritance. Brett has put rat poison in the apple pie; Margo, unaware of Brett's activities, has laced the chocolate mousse with cyanide. If eaten, the probability of the rat poison being fatal is 0.60 and the probability of the cyanide being fatal is 0.90. Based on past experience, there is a 50% chance that Basil will choose apple pie for dessert, a 40% chance that he will choose chocolate mousse for dessert and a 10% chance that he will skip dessert. If Basil drops dead shortly after finishing his meal, who should be considered the prime suspect?

*Solutions to any or all of the problems may be submitted to John Sheriff (D510). If no one is in the office, just put the solution under the door. Please include your name and student number. Students with correct solutions will be acknowledged and prizes will be awarded at the end of the year based upon performance during the year. Problems and solutions are available at <http://www.cs.uleth.ca/~sheriff/statistics/challenge.htm>.*