Engineering Mathematics and Statistics (B39AX)
Fall 2023

Tutorial 2

Problem A. Suppose that six married couples (i.e., 12 people) are in a room, and we select four of them randomly.

(a) What is the probability that we select two married couples?

(b) What is the probability that there is no married couple in the people we choose?

(c) What is the probability that exactly one married couple is chosen?

Problem B. Having taught Statistics for many years, I have found that 80% of the students who do the coursework exercises pass the exam, but only 10% of the students who don't do the coursework pass the exam. Every year only 60% of students do the coursework.

(a) What is the percentage of students who pass the exam?

(b) Of the students who pass the exam, what percentage did the coursework?

Problem C. An urn contains 5 red and 3 white marbles. A marble is selected at random, discarded, and two marbles of the other colour are then placed in the urn. Next, a second marble is selected from the urn.

(a) What is the probability that the second marble is red?

(b) What is the probability that the two selected marbles have the same colour?