QMM 1001 - Statistics for Data Analytics
Lab 5   /17

Create and submit an R script which, when run, will print the answers to the following questions. Your R script must include a title with your name and student number and comments for each question number and letter.

1. **(12 marks)** Create a probability space in which a 9-sided die is rolled two times (2 marks)

    a. Create a subset of the probability space from part a in which the sum of the two rolls is less than 6. (2 marks)

    b. Create a subset of the probability space from part a in which the sum of the two rolls is greater than 15. (2 marks)

    c. Find the probability of the intersection of the two subsets from part b and c. Explain your result. (2 marks)

    d. Find the probability of the union of the two subsets from part b and c. Are these events independent? (2 marks)

    e. Regarding the probability space from part a, what is the probability that roll 1 is different from roll 2? What probability rule did you use? (2 marks)

2. **(5 marks)** Use R to shows that for a standard deck of cards,

$$P(\text{Diamond} \cup \text{King}) = \frac{16}{52}$$

Save your R Script as: Last Name, First Name LAB 5

Upload your R Script to the "R Assignment – Lab 5" drop box on Moodle before October 31st at 11:59 PM.