Math 308A—Spring 2020: Homework Assignment 5

1. Suppose that A, B and C are mutually independent events with probabilities \( P(A) = 0.35 \), \( P(B) = 0.55 \), and \( P(C) = 0.6 \) (The definition of mutually independent is in the Finan text (possibly on page 113). In this case it means that the three events are pairwise independent and that \( P(A \cap B \cap C) = P(A)P(B)P(C) \).) (Hint: Use Theorem 7.2, Finan: possibly p. 71)

(a) [10 points] What is the probability that at least one of the three events occurs (use 5 decimal places)?

(b) [10 points] What is the probability that exactly one of the events occurs (use 5 decimal places)?

(c) [10 points] What is the probability that exactly two of the events occur (use 5 decimal places)?