

MTH U481: Spring 2009: Prof. C. King

Assignment 1

Due date: Monday, January 12.

Reading: Sections 2.1 – 2.3.

Problems:

1. p. 26: #1, #2, #4, #12

2. p. 30: #16, #19, #20 (a)

3. Let E, F, G be three events. Find expressions for the events that

a) none of the events occurs

b) at most two of them occur

4. Find the simplest expression for the event $(E \cup F) \cap (F \cup G)$.

5. p. 35: #32

6. You can construct a random number generator by putting four cards numbered $\{1, 2, 3, 4\}$ in a box, and drawing out cards at random. This will produce the four outcomes $\{1, 2, 3, 4\}$ with equal probabilities. By adding more cards to the box, construct a random number generator which produces the outcomes $\{1, 2, 3, 4\}$ with the following probabilities:

$$P(1) = P(2) = \frac{1}{3}; \quad P(3) = \frac{2}{9}; \quad P(4) = \frac{1}{9}$$

7. p. 41: #2