

**MTH U481: Spring 2009: Prof. C. King**

**Assignment 2**

**Due date:** Thursday, January 15.

**Reading:** Sections 2.3 – 2.5.

**Problems:**

1. p. 41: #4, #5, #9, #14

2. Work out the formula for  $P(A \cup B \cup C)$  in terms of the probabilities of  $A, B, C$  and their intersections.

[Hint: write it  $P((A \cup B) \cup C)$  and apply the two-set formula twice].

3. A gambler places two bets. She knows her chances of success are 70% for the first, and 40% for the second. She estimates a 75% probability that at least one of her bets will fail. What is the probability that at least one of her bets is successful?

[Hint: let  $A$  be the event that the first bet succeeds, and  $B$  the event that the second bet succeeds. Figure out what you are told in terms of these events, and what you are asked to find.]

4. p.51: #1, #2, #3, #7, #11