

**Homework 2: Definition of Probability**

1. §1.5, #3, 4, 7
2. Assume that  $P(A \cap B) = 0.3$ ,  $P(A \cap C) = 0.4$ ,  $P(B \cap C) = 0.3$ ,  $P(A^c \cap B^c \cap C) = 0$ ,  $P(C) = 0.6$ ,  $P(A \cup C) = 0.8$ , and  $P(B^c \cup C) = 0.7$ .
  - (a) Fill in all of the probabilities in the Venn diagram for  $A$ ,  $B$ , and  $C$ .
  - (b) Find  $P(B^c)$ ,  $P(A \cap B \cap C)$ , and  $P(A)$ .