1. (3) How many ways can a poker hand, which contains 4 aces be dealt? If each possible poker hand is equally likely, what is the probability that a poker hand contains 4 aces? Remember, a poker hand consists of 5 cards drawn from a standard deck of 52 cards.

2. (3) What is the probability that when two dice are rolled the sum of the two numbers shown does not equal 7 or 11?
3. (2) Suppose $A$, $B$, $C$ are sets in a sample space $S$. Assume that $A$, $B$, and $C$ are three distinct subsets of $S$. Is the following possible?

$$p(A) = p(B) = p(C) = .78$$

If yes, given an example, a Venn diagram suffices. If no, give a clear explanation as to why not.

4. (2) If we expand the expression $(x_1 - 3x_2 + x_3 + 7x_4)^9$, what is the coefficient of the term $x_1^3x_2^5x_3^7$?