**Part V: Chapter 5: Probabilities for Binomial Distributions**

**Task 1: For the entire set of 118 test takers, calculate the probability of scoring above 70 which was the promotion cutoff score. Open the full data set and sort the combined scores to get the number of successful candidates.**

**P(success) =**

**Task 2: Suppose that in an adjacent city with a comparable population and general demographics, ten firefighters are randomly selected to take the same national promotional exam. Determine if this group can be treated as a binomial distribution. State each requirement.**

**Task 3:**

* **Calculate the probability that none of the test takers in the group of ten has obtained a score high enough to qualify for promotion.**
* **Calculate the probability that at least one of the test takers in the group of ten has obtained a score high enough to qualify for promotion.**
* **Describe the relationship between these results.**

**Task 4: Would it be considered statistically unusual if more than 8 out of the 10 randomly selected candidates scored high enough to be eligible for promotion? Compute the probability and explain why.**

**Task 5: Would it be considered statistically unusual if exactly 7 out of the 10 randomly selected candidates scored high enough to be eligible for promotion? Compute the probability and explain why.**