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

**A validation study is to be completed using 20 randomly selected children from the East Boston area where *p* represents the probability of selecting a smoker. The probability of randomly selecting a smoker from the full data set: p = \_\_\_\_\_**

**Task 1: Find the probability that none of the 20 randomly selected children is a smoker.**

**Task 2: Find the probability that at least one of the 20 randomly selected children is a smoker.**

**Task 3: Describe the relationship between the results of Tasks 1 and 2.**

**Task 4: Find the probability that fewer than 5 of the 20 randomly selected children are smokers.**

**Task 5: Would it be considered statistically unusual if exactly 5 out of the 20 randomly selected children are found to be smokers? Compute the probability and explain why.**