Choose an SRS of size *n* from a large population with population proportion *p* having some characteristic of interest. Let $\hat{p}$ be the proportion of the sample having that characteristic.

1. What is the mean of the sampling distribution?

2. What is the standard deviation of the sampling distribution?

3. Under what condition will the formula for the standard deviation of $\hat{p}$ be reasonably accurate?

4. The sampling distribution of $\hat{p}$ is approximately Normal when the sample size *n* is "large." What conditions need to be met to use the Normal approximation to the sampling distribution of $\hat{p}$?

According to government data, 22% of American children under the age of 6 live in households with incomes less than the official poverty level. A study of learning in early childhood chooses an SRS of 300 children.

5. What is the probability that more than 24% of the sample are from poverty households? (Remember to check that you can use the Normal approximation.)

6. Compute the probability that more than 24% of the sample are from poverty households directly using the Binomial distribution.