AP Stat   Worksheet: Sample Means   Name _____

Follow the State, Plan, Do template to answer each question. You do not have to rewrite the parameter or conditions (if they have already been met) for each part of the question.

1.   A survey found that the American family generates an average of 17.2 pounds of glass garbage each year. Assume the distribution is normal with a standard deviation of 2.5 pounds.

   a.   What is the probability that a randomly selected family will generate more than 18 pounds of garbage?

   b.   What is the probability that the mean sample of 55 families selected randomly will be between 17 and 18 pounds?

   c.   If the distribution of glass garbage produced by the population were not normal, describe the distributions for a) and b).

2.   The average yearly cost per household of owning a dog is $186.80. Assume the standard deviation of the distribution is $32. Suppose we randomly select 50 households that own a dog. What is the probability that the sample mean for these 50 households is less than $175?

3.   The average teacher's salary in New Jersey (ranked first among states) is $52,174. Assume the distribution is normal with a standard deviation of $700.

   a.   What is the probability that a randomly selected teacher makes less than $50,000 a year?

   b.   If we randomly sample 100 teachers' salaries, what is the probability that the sample mean is less than $50,000?