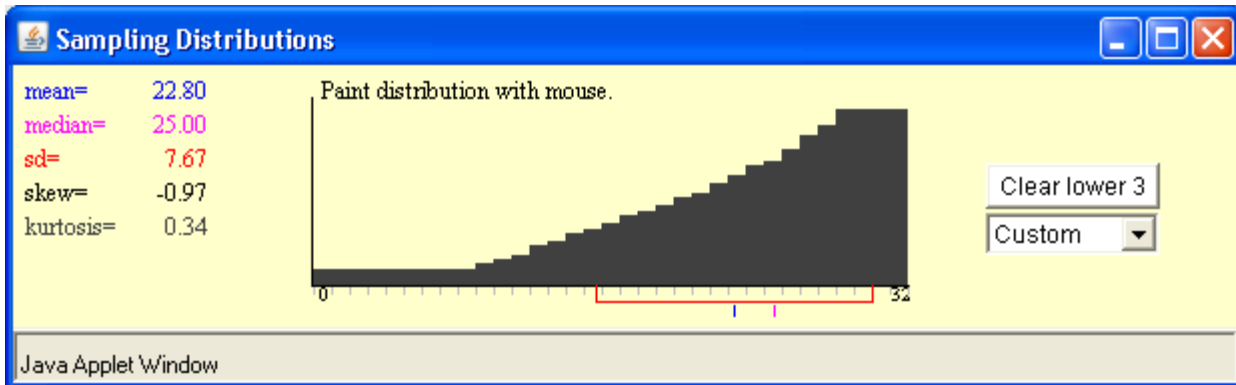


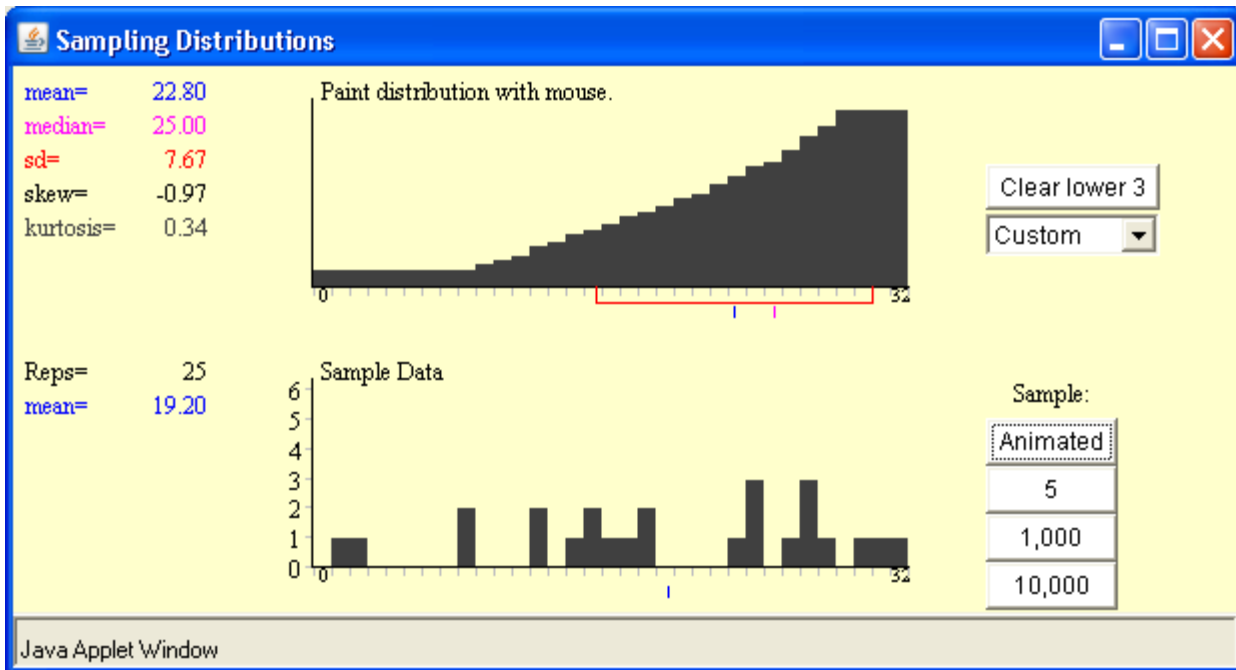
Instructor Notes:

For the 1st part draw a population of your own choosing ... see example below ... show to the class.



Now have the students work through the 1st part of the quiz.

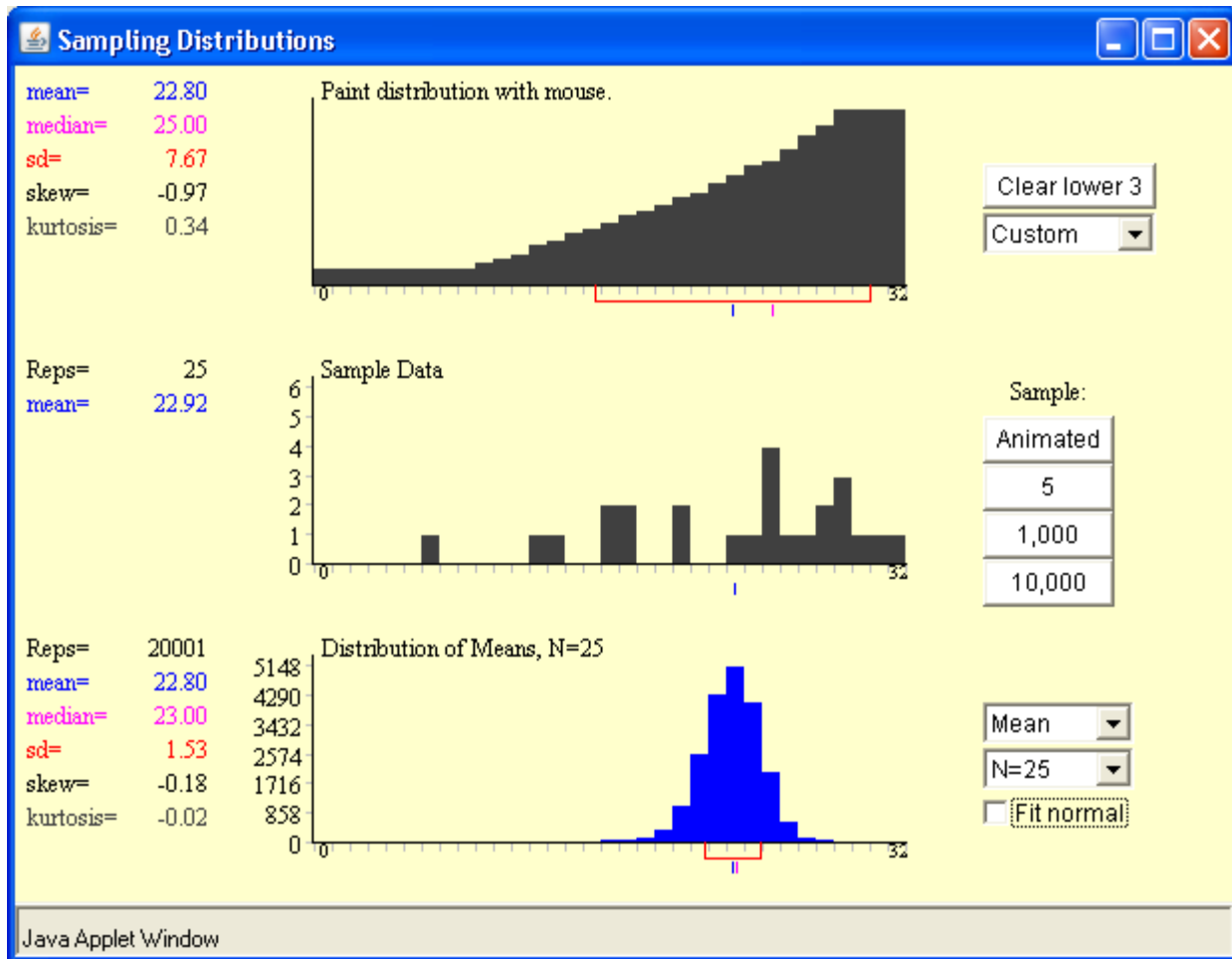
Select one sample of size 25 ... see example below ... using the Animated button ... show to the class.



Now have the students work through the 2nd part of the quiz.

Now have the students work through the 3rd part of the quiz before returning to the applet.

Confirm the answers by using the 10,000 button a number of times ... see example below ... show.



Student Handout on the following page: Sampling Distribution Quiz

Sampling Distribution Quiz

For the illustration shown, the population of individual values has a mean of _____, a standard deviation of _____ and a shape that could be described as _____.

The symbols used to represent the mean and standard deviation of the population of individual values are _____ and _____, respectively.

For the illustration shown, the distribution of the data for one sample has a mean of _____, and a shape that can be described as _____.

The symbols used to represent the mean and standard deviation for a sample are _____ and _____, respectively.

For the illustration shown, suppose thousands of different samples of size $n=25$ were taken and the means for all of these samples were calculated and summarized. Approximately what would be the value of the mean of all of these thousands of sample means? _____. And what would be the approximate standard deviation? _____. The distribution of all these thousands of sample means would have a shape that can be described as _____.

The symbols used to represent the mean and standard deviation of all the potential sample means are _____ and _____, respectively.

Draw a graph of the distribution of all the potential sample means.
Label the mean and standard deviation on your graph.

According to the Empirical Rule [68-95-99 Rule], approximately 95% of the potential sample means will be within plus or minus _____ from the population mean? Show work, and illustrate on your graph above.

Assessment - Question

A waiter believes the distribution of his tips has a model that is right tailed, with a mean = \$9.60 and a stdev = \$20.

Explain why you cannot determine the probability that a given table will tip him at least \$10.

Consider instead the 25 tables he will be assigned during his next shift,

... describe the sampling distribution of the mean tip resulting from these 25 tables.

... would it be reasonable for the 25 tables to result in a mean tip of at least \$10. Explain.