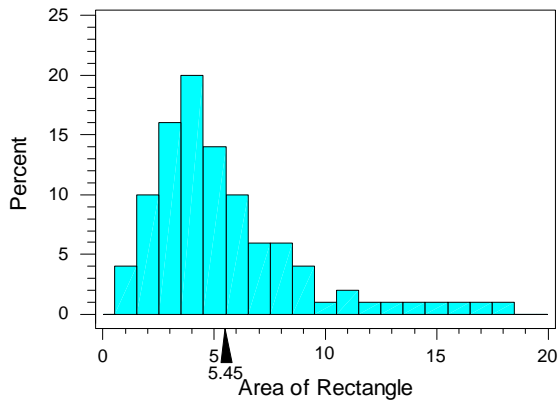
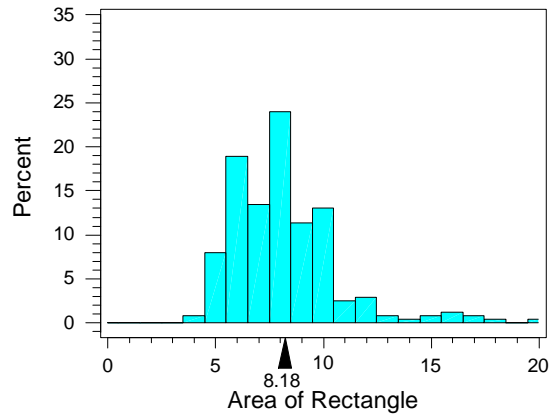


Sampling from the population of 100 rectangles

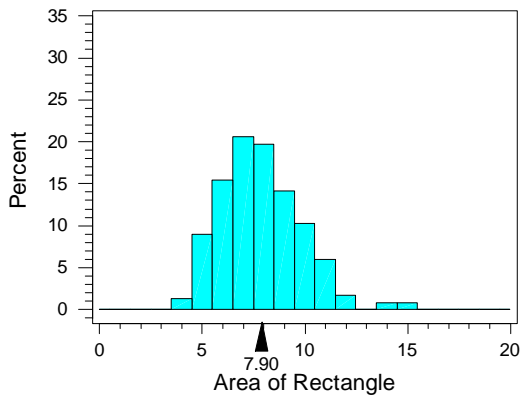
Population of 100 Rectangles



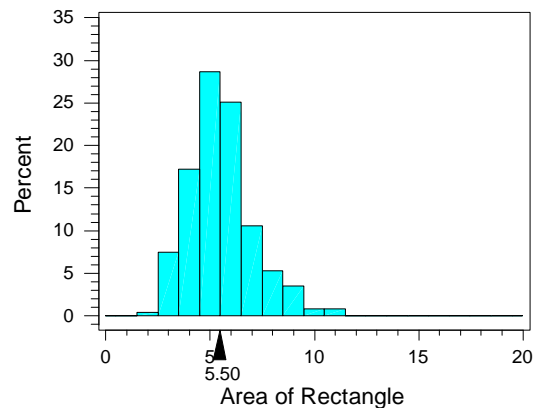
Distribution of Gessed Values



Distribution of Judgement Sample Means (n=5)



Distribution of Random Sample Means (n=5)



Guessed and judgement sample values tend to be biased high (overestimating the population mean). This may be due to the same sort of bias that would occur if you cut out the rectangles and put them in a bag and picked out a sample from the bag. Smaller rectangles tend to have a smaller chance of being chosen. When we look at the rectangles, our eyes tend to see the larger rectangles but miss the smaller ones.

The means based on random samples of 5 are unbiased (the average of the sample means will equal the population mean). There is less variation around the center of the distribution of sample means (n=5) than the variation around the center of the population.