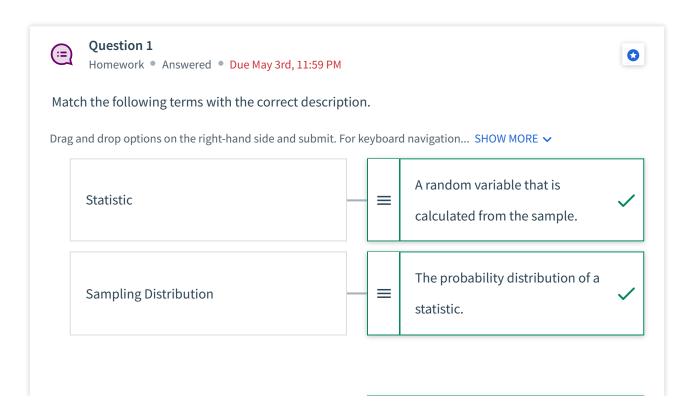
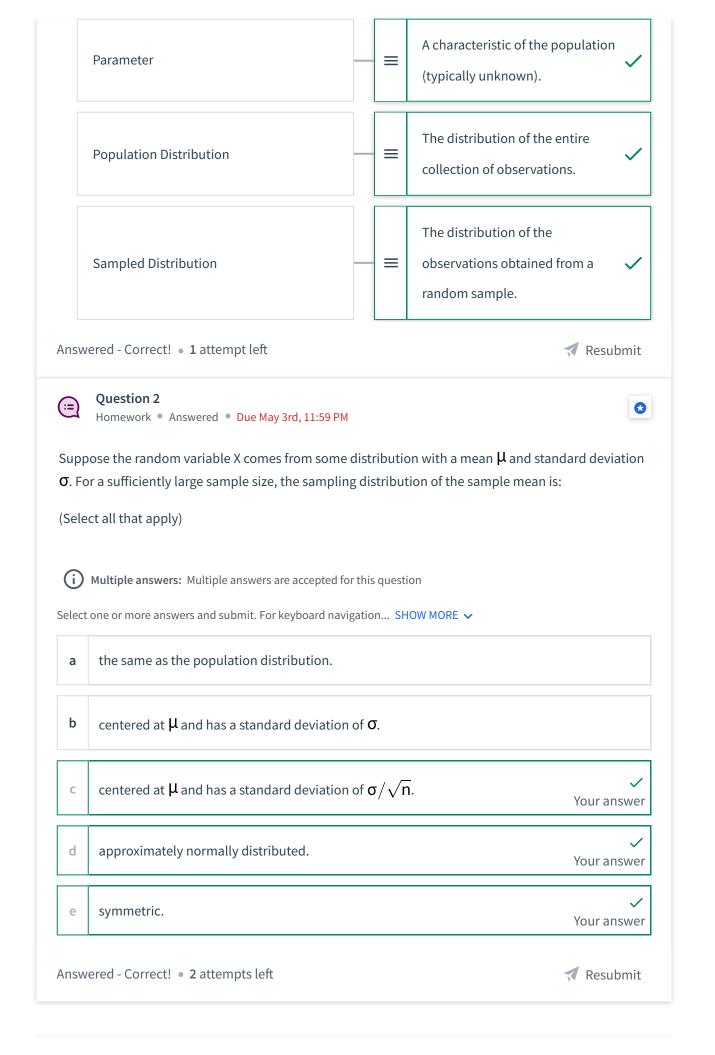
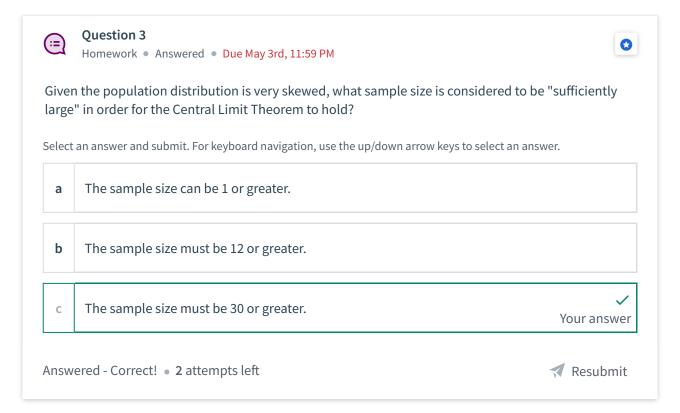


Problem Set #4 - Sampling Distributions and The Central Limit Theorem

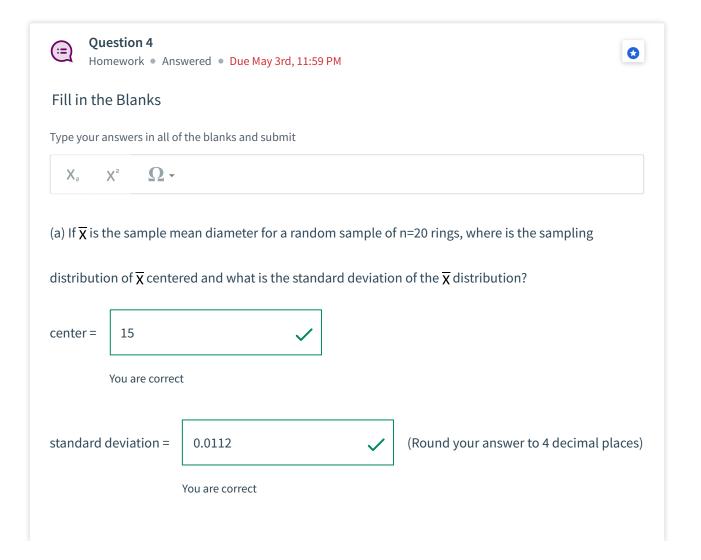
The following problems will cover material discussed in Week 4. You must answer each question correctly to earn credit on the question. You have three attempts per question.

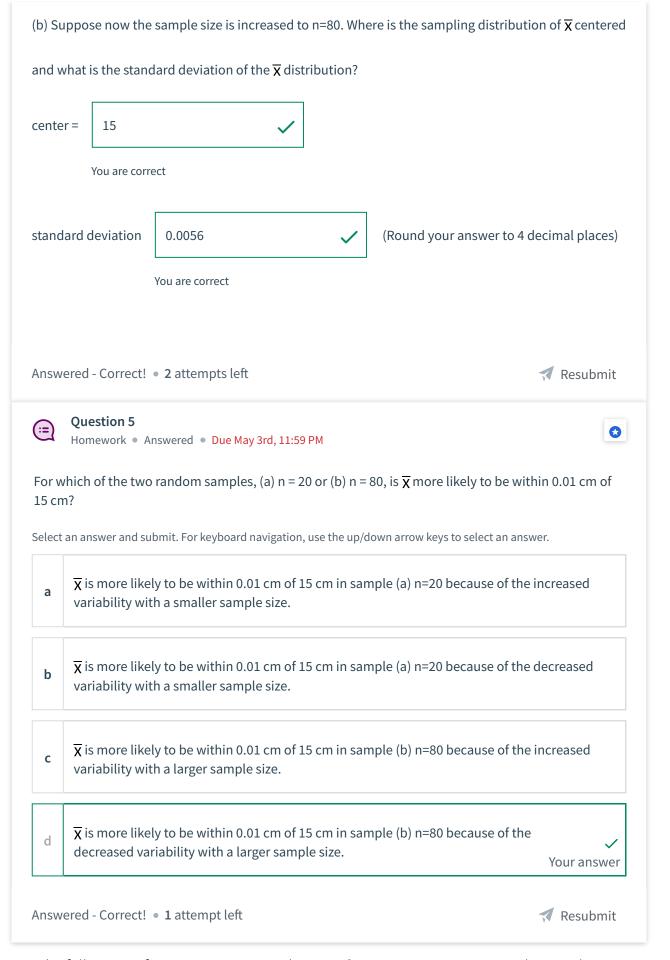






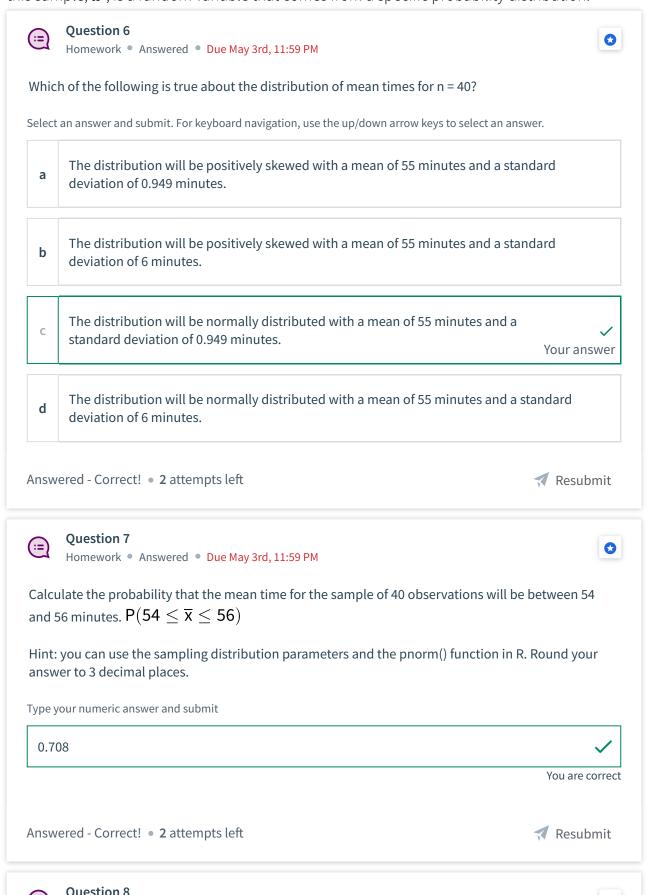
Use the following information to answer the next two questions: The inside diameter of a randomly selected piston ring is a random variable with mean value 15 cm and standard deviation 0.05 cm.

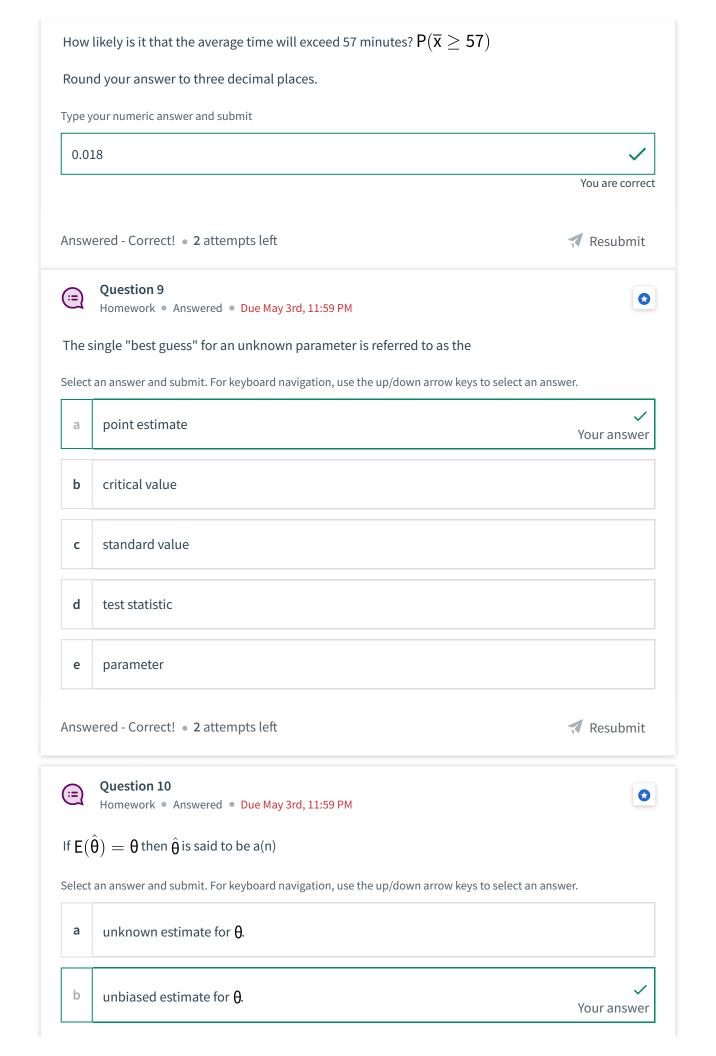


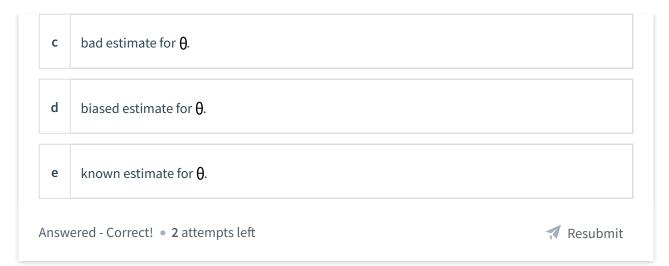


Use the following information to answer the next **three** questions: Suppose the time between buses at a particular stop is a positively skewed random variable with an average of 55 minutes

and standard deviation of 6 minutes. Suppose the time between buses at this stop is measured for a randomly selected week, resulting in a random sample of n=40 times. The average of this sample, \overline{x} , is a random variable that comes from a specific probability distribution.







Use the following information to answer the next two questions: In May of 2022, Americans were asked by the Pew Research Center whether they think masks should be required by passengers on airplanes. Suppose the population proportion of Americans that think masks should be required on planes is 0.57.

