1. Consider the following population, P, where $P = \{1, 1, 3, 5, 10\}$ 1 point

And the following sample, S, where $S = \{1, 3\}$

What is the value of the **sample mean?**

- 4
- It cannot be computed with the given information.
- 6
- 2

2. What is the difference between a sample and a population in statistics? 1 point

- A sample is the entire group being studied, while a population is a subset of that group.
- A population is the entire group being studied, while a sample is a subset of that group.
- A population is a group from which a sample is drawn, and both terms can be used interchangeably.

3. Let S be a random sample, where $S = \{5, 2, 7, 10\}$. Calculate the **population variance** for the sample set. 1 point

- 2.9
- 6
- 8.5
- 34

4. A researcher conducts a study by taking independent random samples. Assuming the experiment meets the conditions of the Law of Large Numbers, which sample mean is the closest to the value of the population mean? 1 point

n	mean
20	4.77
50	5.16
100	4.97
200	5.01

- 4.77
- 5.16
- 4.97
- 5.01

5. Which of the following best describes the Central Limit Theorem? 1 point

- The Central Limit Theorem states that the mean of a population is always normally distributed.
- The Central Limit Theorem states that, under certain conditions, as the sample size increases, the sample mean approaches the population mean.
- The Central Limit Theorem states that, under certain conditions, as the sample size increases, the sampling distribution of the mean approaches a normal distribution, regardless of the distribution of the population.
- The Central Limit Theorem states that as the sample size increases, the variance of the population decreases.