✓ **Congratulations! You passed!**

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1. Which of the following statements accurately describe a point estimate? Select all that apply.

☑ A point estimate uses a single value.

✓ **Correct**

☐ A point estimate estimates a sample statistic.

☐ A point estimate uses a range of values.

☑ A point estimate estimates a population parameter.

✓ **Correct**

1 / 1 point

2. What concept describes the likelihood that a particular sampling method will produce a confidence interval that includes the population parameter?

○ Point estimate

○ Sample statistic

○ Margin of error

⦿ Confidence level

✓ **Correct**

1 / 1 point

3. A data professional working for a media company is estimating the average amount of time a visitor spends on their website. Based on a sample mean of 4 minutes, they construct the following 95% confidence interval: [3.8 , 4.2]. What does 95% refer to?

○ The percentage of all possible sample means that fall within the range of the interval

○ The margin of error

○ The percentage of data values in the dataset

⦿ The success rate of the estimation process

✓ **Correct**

1 / 1 point

4. A data analytics team with a clothing manufacturer constructs a confidence interval to help estimate future returns. First, they identify the sample statistic. Then, they choose a confidence level of 95%. According to the four steps to constructing a confidence interval for a proportion, what should they do next?

○ Plot a histogram

○ Choose a confidence level

⦿ Find the margin of error

○ Calculate the interval

✓ **Correct**

1 / 1 point

5. A data professional at an electricity utility works on a project involving household demand based on sample data. They want to construct a 95% confidence interval using a sample size of 5,000. However, they are unable to get enough data. So they decide to construct a 95% confidence interval using a sample size of 500. What happens as a result of this smaller sample size?

⦿ The margin of error will increase.

○ The confidence interval will get narrower.

○ The population parameter will get larger.

○ The margin of error will decrease.

1 / 1 point

6. A data professional is using `scipy.stats.norm.interval()` in Python to construct a confidence interval. Which of the following pieces of code can they use to choose a confidence level of 99%?

1 / 1 point

- ⦿ `alpha = 0.99`
- ○ `std = 0.99`
- ○ `loc = 0.99`
- ○ `scale = 0.99`

✓ Correct

7. Fill in the blank: Because there is more uncertainty involved in estimating the standard error, data professionals use the _____ when working with a small sample size.

1 / 1 point

- ○ z-distribution
- ⦿ t-distribution
- ○ normal distribution
- ○ s-distribution

✓ Correct

8. Which of the following statements accurately describe the graph of the t-distribution? Select all that apply.

1 / 1 point

- ☐ It has smaller tails than the standard normal distribution.
- ☑ It has larger tails than the standard normal distribution.

✓ Correct

- ☐ As the sample size decreases, the t-distribution approaches the normal distribution.
- ☑ As the sample size increases, the t-distribution approaches the normal distribution.

✓ Correct