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1. Which of the following statements accurately describe a representative sample? Select all that apply.

1 / 1 point

☒ A representative sample helps data professionals make reliable inferences based on sample data.

✓ Correct

☒ A representative sample reflects the characteristics of the overall population.

✓ Correct

☐ A representative sample represents some groups in the population but not others.

☐ A representative sample suffers from sampling bias.

2. Which of the following activities are stages in the typical sampling process? Select all that apply.

0.75 / 1 point

☒ Make a point estimate of a population parameter

✗ This should not be selected
Review [the video about the sampling process](#).

☒ Identify the target population

✓ Correct

☒ Select the sampling frame

✓ Correct

☐ Perform exploratory data analysis

3. Which of the following statements accurately describes the relationship between probability sampling and non-probability sampling?

1 / 1 point

☐ Probability sampling is typically more convenient than non-probability sampling.

☒ Probability sampling gives data professionals a better chance of generating a representative sample than non-probability sampling.

☐ Probability sampling is more biased than non-probability sampling.

☐ Probability sampling is typically less expensive than non-probability sampling.

✓ Correct

4. Which sampling method involves dividing a population into groups and randomly selecting some members from each group for the sample?

1 / 1 point

☐ Systematic random sampling

☐ Cluster random sampling

☒ Stratified random sampling

☐ Simple random sampling

✓ Correct

5. Which sampling method involves choosing members of a population who are easy to contact or reach?

1 / 1 point

☐ Voluntary response sampling

☐ Snowball sampling

☒ Convenience sampling

☐ Purposive sampling

✓ Correct

6. Fill in the blank: Standard error measures the _____ of a sampling distribution.

1 / 1 point

- ☐ mode
- ☐ mean
- ☒ standard deviation
- ☐ median

✓ Correct

7. What does the central limit theorem state?

1 / 1 point

- ☐ The sampling distribution of the mean approaches a binomial distribution as the sample size increases.
- ☐ The sampling distribution of the mean approaches a Bernoulli distribution as the sample size increases.
- ☒ The sampling distribution of the mean approaches a normal distribution as the sample size increases.
- ☐ The sampling distribution of the mean approaches a Poisson distribution as the sample size increases.

✓ Correct

8. A data professional is working with data about annual household income. They want to use Python to simulate taking a random sample of income values from the dataset. They write the following code: `sample(n=100, replace=True, random_state=230)`. What does the argument `replace=True` refer to?

1 / 1 point

- ☐ Replacing decimal values with whole numbers
- ☒ Sampling with replacement
- ☐ Sampling without replacement
- ☐ Replacing whole numbers with decimal values

✓ Correct