Your grade: 100%

Your latest: **100%** • Your highest: **100%** • To pass you need at least 70%. We keep your highest score.

Next item →

1. Which one of the following is common to both machine learning and statistical inference? 1 / 1 point

- ○ Using sample data to make inferences about a hypothesis.
- ○ Using population data to make inferences about a null sample.
- ○ Using population data to model a null hypothesis.
- ◉ Using sample data to infer qualities of the underlying population distribution.

Correct
Correct. In both machine learning and statistical inference, we're using sample data to infer qualities of the underlying population distribution.

2. Which one of the following describes an approach to customer churn prediction stated in terms of probability? 1 / 1 point

- ○ Predicting a score for individuals that estimates the probability the customer will stay.
- ○ Churn prediction is a data-generating process representing the actual joint distribution between our x and the y variable.
- ○ Data related to churn may include the target variable for whether a certain customer has left.
- ◉ Predicting a score for individuals that estimates the probability the customer will leave.

Correct
Correct. Churn prediction is often approached by predicting a score for individuals that estimates the probability the customer will leave.

3. What is customer lifetime value? 1 / 1 point

- ◉ The total purchases over the time which the person is a customer.
- ○ The total churn a customer generates in the population.
- ○ The total churn generated by a customer over their lifetime.
- ○ The total value that the customer receives during their life.

Correct
Correct. Customer lifetime value consists of the purchase amounts over the entire time that a person has been a customer.

4. Which one the following statements about the normalized histogram of a variable is true? 1 / 1 point

- ○ It is a parametric representation of the population distribution.
- ○ It is a non-parametric representation of the population variance.
- ◉ It provides an estimate of the variable's probability distribution.
- ○ It serves as a bar chart for the null hypothesis.

Correct
Correct. The normalized histogram of a variable estimates the variable's probability distribution, and the estimate improves with the amount of data used.

5. The outcome of rolling a fair die can be modelled as a _____ distribution. 1 / 1 point

- ○ Poisson
- ○ log-normal
- ○ normal
- ◉ uniform

Correct
Correct. The chance of rolling any particular value for a fair die is equally likely, so the outcome is uniformly distributed.

6. Which one of the following features best distinguishes the Bayesian approach to statistics from the Frequentist approach? 1 / 1 point

- ○ Frequentist statistics requires construction of a prior distribution.
- ○ Bayesian statistics is better than Frequentist.
- ◉ Bayesian statistics incorporate the probability of the hypothesis being true.
- ○ Frequentist statistics incorporates the probability of the hypothesis being true.

Correct
Correct. Bayesian statistics allows for experimenters to incorporate their prior beliefs of the [population] distribution [of a given variable]. For frequentists, it's solely based on the data available. [that is, there is no formal mechanism in frequentist statistics for incorporating prior knowledge, one 'lets the data do the talking']

7. Which of the following best describes what a hypothesis is? 1 / 1 point

- ○ A hypothesis is a statement about a posterior distribution.
- ○ A hypothesis is a statement about a prior distribution.
- ○ A hypothesis is a statement about a sample of the population.
- ◉ A hypothesis is a statement about a population.

Correct
Correct. A hypothesis could be suggested by a sample of the population, but it is a statement about the entire population.

8. A Type 2 error in hypothesis testing is _____: 1 / 1 point

- ◉ incorrectly accepting the null hypothesis.
- ○ incorrectly accepting the alternative hypothesis.
- ○ correctly rejecting the null hypothesis.
- ○ correctly rejecting the alternative hypothesis.

Correct
Correct. A type 2 error is incorrectly accepting the null hypothesis.

9. Which statement best describes a consequence of a type II error in the context of a churn prediction example? Assume that the null hypothesis is that customer churn is due to chance, and that the alternative hypothesis is that customers enrolled for greater than two years will not churn over the next year. 1 / 1 point

- ○ You correctly conclude that a customer will eventually churn
- ○ You correctly conclude that customer churn is by chance
- ○ You incorrectly conclude that there is no effect
- ◉ You incorrectly conclude that customer churn is by chance

Correct
Correct. A type II error means that you incorrectly accept the null hypothesis, so you incorrectly conclude that customer churn is by chance.

10. Which of the following is a statistic used for hypothesis testing? 1 / 1 point

- ○ The rejection region.
- ◉ The likelihood ratio.
- ○ The standard deviation.
- ○ The acceptance region.

Correct
Correct. The likelihood ratio can be used as a test statistic, to decide whether to accept or reject the null hypothesis.