✓ **Congratulations! You passed!**

Grade received 100%   To pass 80% or higher

Go to next item

1. Tree-based learning is a type of unsupervised machine learning that performs classification and regression tasks.   **1 / 1 point**

   ○ True
   ⦿ False

   ✓ **Correct**
   Tree-based learning is a type of supervised machine learning. It is supervised because it uses labeled datasets to train algorithms to classify or predict outcomes. Unsupervised machine learning uses algorithms to analyze unlabeled data and find underlying structure.

2. Fill in the blank: Similar to a flow chart, a _____ is a classification model that represents various solutions available to solve a given problem based on the possible outcomes of each solution.   **1 / 1 point**

   ○ linear regression
   ○ binary logistic regression
   ⦿ decision tree
   ○ Poisson distribution

   ✓ **Correct**
   A decision tree is a classification model that represents various solutions available to solve a given problem based on the possible outcomes of each solution. Decision trees enable data professionals to make predictions about future events based on currently available information. Binary logistic regression models the probability of an event that has two possible outcomes.

3. In a decision tree, which node is the location where the first decision is made?   **1 / 1 point**

   ○ Leaf
   ⦿ Root
   ○ Decision
   ○ Branch

   ✓ **Correct**
   In a decision tree, the root node is where the first decision is made. It is the first node in the tree, and all decisions needed to make the prediction stem from it.

4. In tree-based learning, how is a split determined?   **1 / 1 point**

   ○ By the level of balance present among the predictions made by the model
   ○ By the amount of leaves present
   ○ By the number of decisions required before arriving at a final prediction
   ⦿ By which variables and cut-off values offer the most predictive power

   ✓ **Correct**
   In tree-based learning, a split is determined by which variables and cut-off values offer the most predictive power. When this happens repeatedly, groups of data mostly or entirely of the same class are what is left.