✅ **Congratulations! You passed!**

Grade received 100%   To pass 66% or higher

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1. Which one is TRUE about the kNN algorithm?   `1 / 1 point`

○ kNN is a classification algorithm that takes a bunch of unlabelled points and uses them to learn how to label other points.

◉ kNN algorithm can be used to estimate values for a continuous target.

○ kNN calculates similarity by measuring how close the two data points' response values are.

○ The most similar point in kNN is the one with the smallest distance averaged across all normalized features.

✓ **Correct**
Correct! kNN can be used for both classification and regression prediction tasks. In the case of a continuous target, the prediction is taken as the average or median of the nearest neighbours.

2. If the information gain of the tree by using attribute A is 0.3, what can we infer?   `1 / 1 point`

○ By making this split, we increase the randomness in each child node by 0.3.

○ Entropy in the decision tree increases by 0.3 if we make this split.

◉ The entropy of a tree before split minus weighted entropy after split by attribute A is 0.3.

○ Compared to attribute B with 0.65 information gain, attribute A should be selected first for splitting.

✓ **Correct**
Correct! This describes how information gain is calculated, measuring how much certainty has increased by making a split.

3. When we have a value of K for KNN that's too small, what will the model most likely look like?   `1 / 1 point`

○ The model will be overly simple and does not capture enough noise.

◉ The model will be highly complex and captures too much noise.

○ The model will have high out-of-sample accuracy.

○ The model will have high accuracy on the test set.

✓ **Correct**
Correct! By looking at too few neighbours, we can capture an anomaly in the data, which means that prediction isn't generalized enough.