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Which of the following statements are true about Decision Trees?

- 1 They are very stable
- 2 They provide an interpretable approach
- 3 They are able to approach the "optimal function" for nearly any data distribution (e.g. beyond linearly separable data)
- 4 They work well for a high number of observations
- 5 They do not work for Regression

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4 You cannot only explain

Which of the following statements are true about Decision Trees?

- 1 They are very stable 0% 2
- 2 They provide an interpretable approach 100% 38 ✓
- 3 They are able to approach the "optimal function" for nearly any data distribution (e.g. beyond linearly separable data) 8% 3 ✓
- 4 They work well for a high number of observations 79% 31 ✓
- 5 They do not work for Regression 0% 2

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Which of the following statements are true about the construction of a decision tree?

- 1 "The same feature cannot be used twice consecutively"
- 2 "The same feature cannot be used twice overall"
- 3 I can use a pair of features if it gives me a better split
- 4 I want to find the split that has minimal impurity
- 5 To define a new split, I only use one example
- 6

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Which of the following statements are true about the construction of a decision tree?

- 1 "The same feature cannot be used twice consecutively" 27% 9
- 2 "The same feature cannot be used twice overall" 57% 9
- 3 I can use a pair of features if it gives me a better split 30% 12
- 4 I want to find the split that has minimal impurity 98% 30 ✓
- 5 To define a new split, I only use one example 0% 2
- 6 0% 0

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What is the problem of overfitting

- 1 I will have a bad error on the train set
- 2 I will have a bad error on the test set
- 3 My predictor may change a lot if I change the training set

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4 You cannot only explain

What is the problem of overfitting

- 1 I will have a bad error on the train set 51% 4
- 2 I will have a bad error on the test set 98% 22 ✓
- 3 My predictor may change a lot if I change the training set 73% 22 ✓

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How can I reduce overfitting?

- 1 Use deeper trees
- 2 Specify max\_depth to a small number
- 3 Use a minimal number of samples per leaf (min\_sample\_leaf)
- 4 Evaluate error on a validation set to choose the depth
- 5 Use pruning
- 6 Use random forests

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How can I reduce overfitting?

- 1 Use deeper trees 47% 2
- 2 Specify max\_depth to a small number 81% 26 ✓
- 3 Use a minimal number of samples per leaf (min\_sample\_leaf) 65% 20 ✓
- 4 Evaluate error on a validation set to choose the depth 86% 21 ✓
- 5 Use pruning 69% 22 ✓
- 6 Use random forests 72% 23 ✓

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Which of the following statements are true about Random Forests?

- 1 They are very stable
- 2 We need to check feature\_importance
- 3 They are very fast to train and fast for prediction
- 4 Bootstrap consists in using only a subset of points for each tree

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4 You cannot only explain

Which of the following statements are true about Random Forests?

- 1 They are very stable 77% 24 ✓
- 2 We need to check feature\_importance 61% 19 ✓
- 3 They are very fast to train and fast for prediction 33% 4
- 4 Bootstrap consists in using only a subset of points for each tree 74% 23 ✓

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