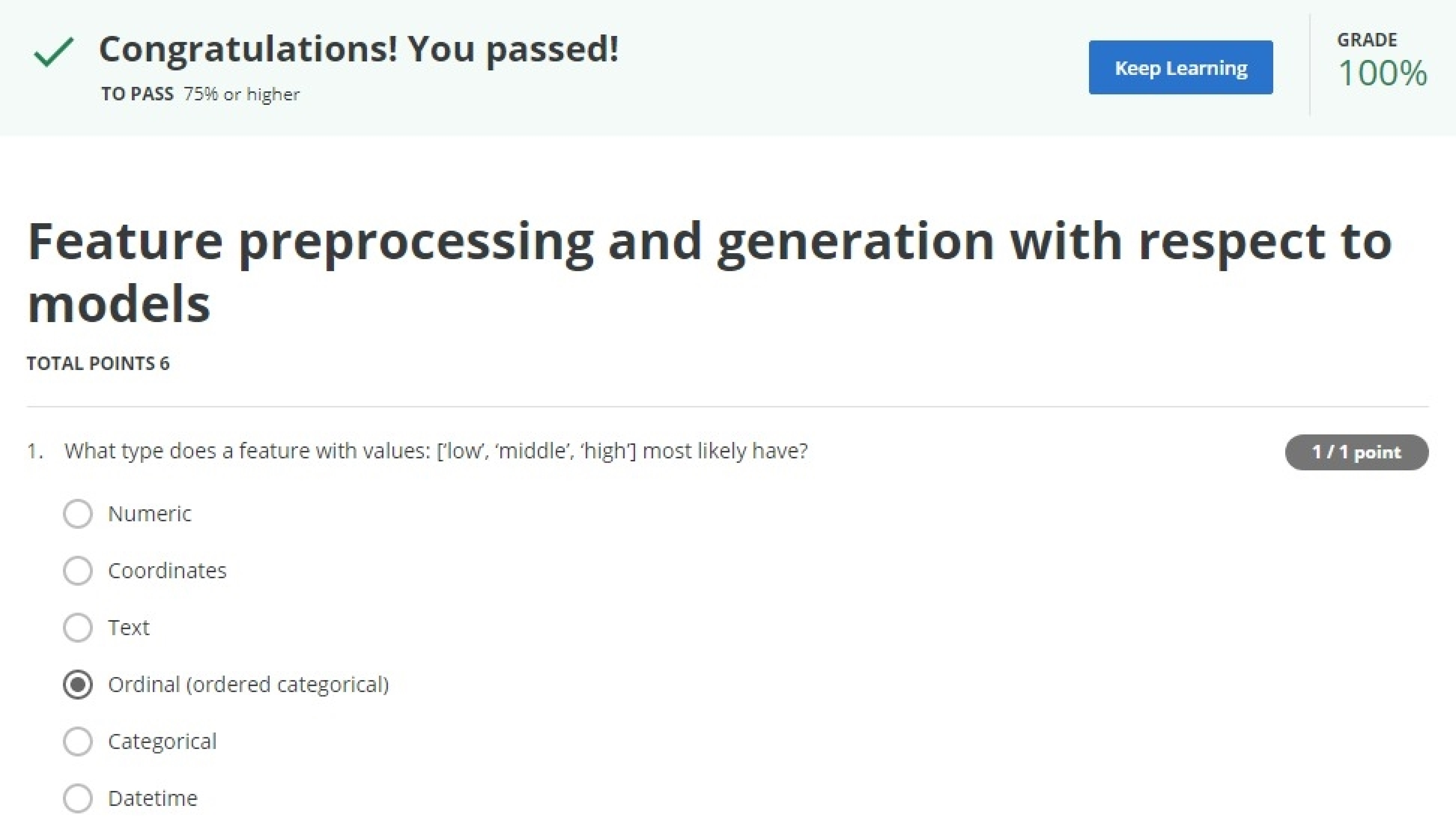


✓ Congratulations! You passed!

TO PASS 75% or higher

GRADE
100%

Feature preprocessing and generation with respect to models

TOTAL POINTS 6

1. What type does a feature with values: ['low', 'middle', 'high'] most likely have?

1 / 1 point

○ Numeric

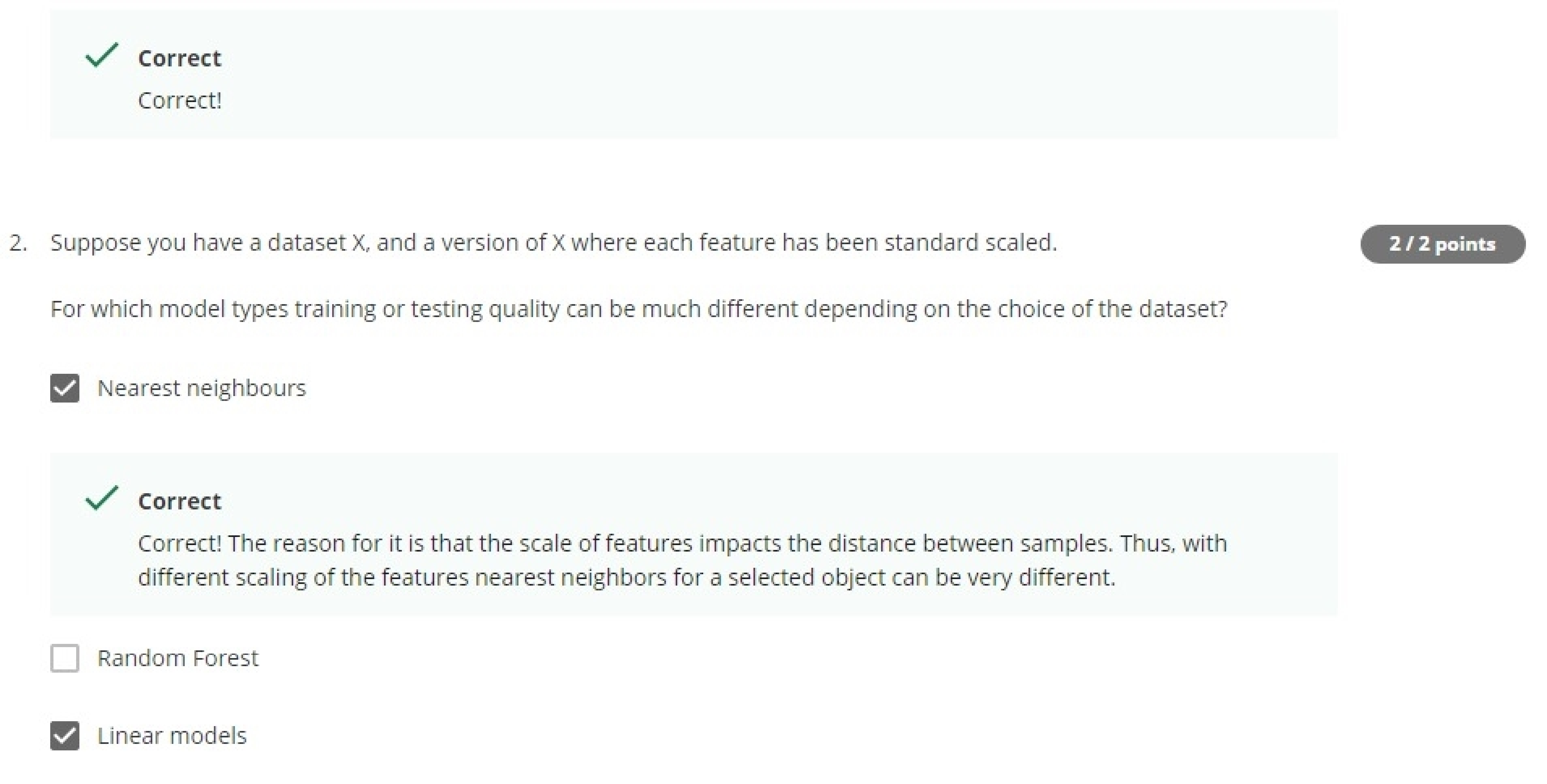
○ Coordinates

○ Text

● Ordinal (ordered categorical)

○ Categorical

○ Datetime



✓ **Correct**

Correct!

2. Suppose you have a dataset X, and a version of X where each feature has been standard scaled.

2 / 2 points

For which model types training or testing quality can be much different depending on the choice of the dataset?

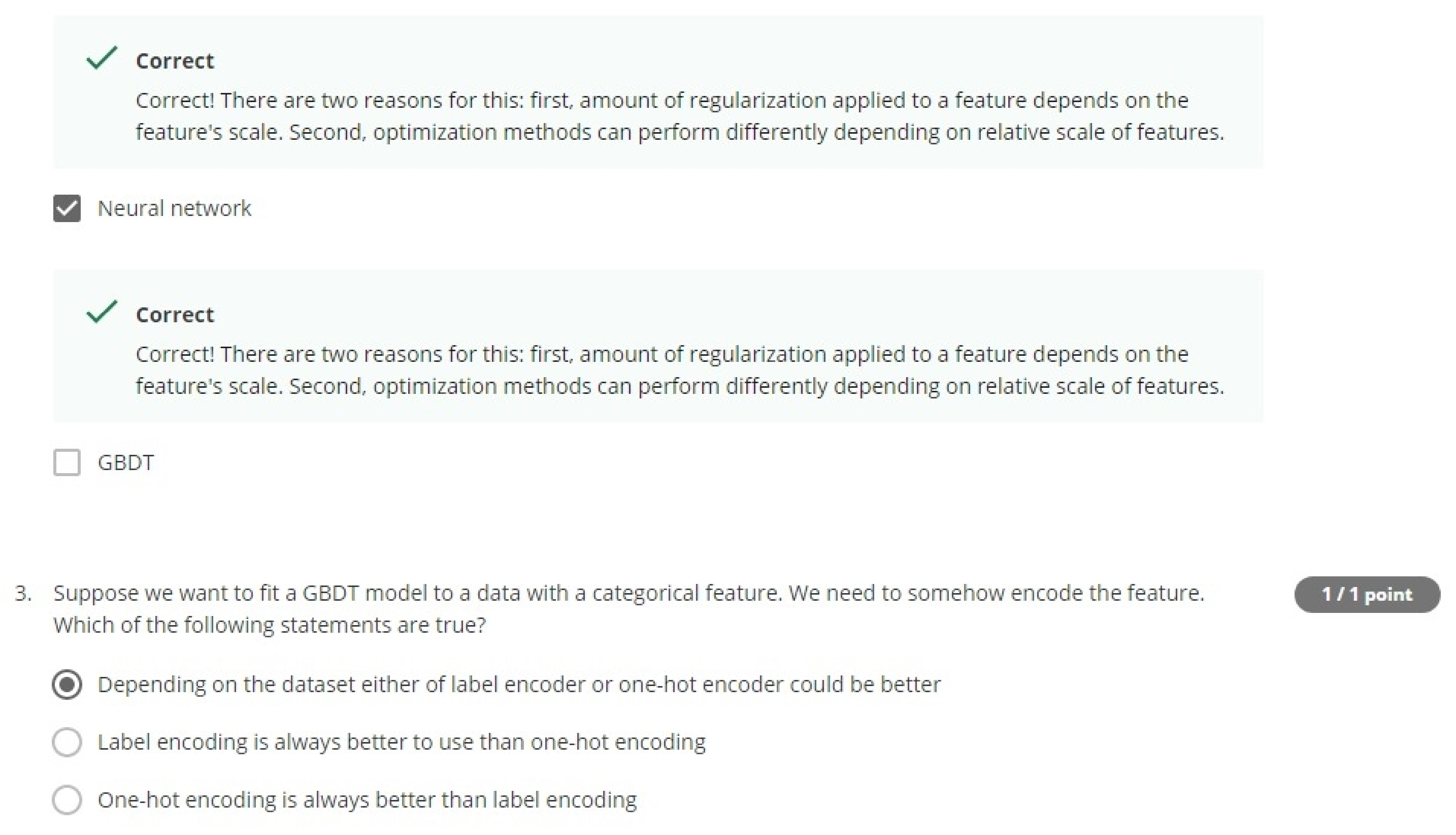
☑ Nearest neighbours

✓ **Correct**

Correct! The reason for it is that the scale of features impacts the distance between samples. Thus, with different scaling of the features nearest neighbors for a selected object can be very different.

☐ Random Forest

☑ Linear models



✓ **Correct**

Correct! There are two reasons for this: first, amount of regularization applied to a feature depends on the feature's scale. Second, optimization methods can perform differently depending on relative scale of features.

☑ Neural network

✓ **Correct**

Correct! There are two reasons for this: first, amount of regularization applied to a feature depends on the feature's scale. Second, optimization methods can perform differently depending on relative scale of features.

□ GBDT

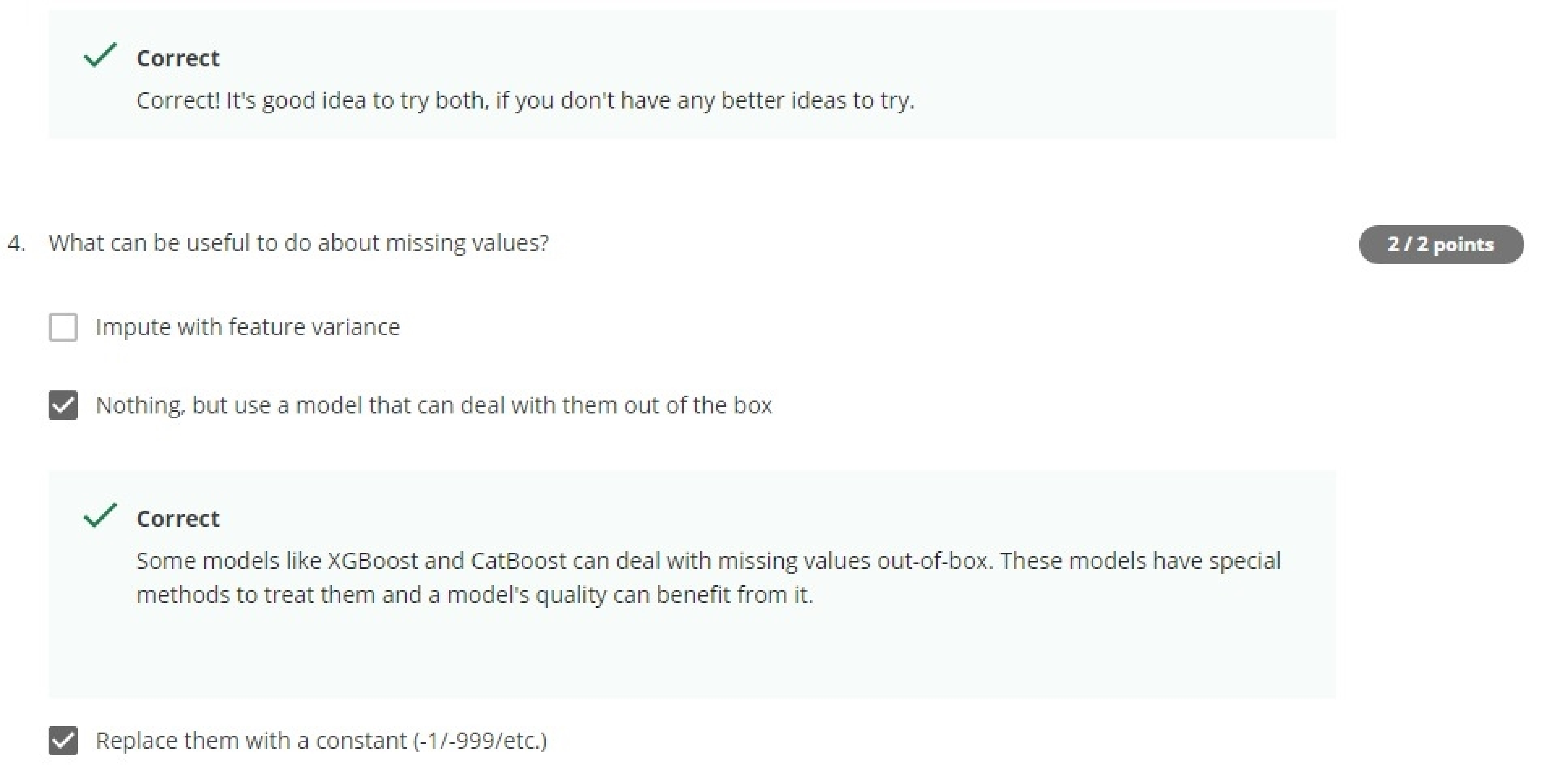
3. Suppose we want to fit a GBDT model to a data with a categorical feature. We need to somehow encode the feature. Which of the following statements are true?

1 / 1 point

● Depending on the dataset either of label encoder or one-hot encoder could be better

○ Label encoding is always better to use than one-hot encoding

○ One-hot encoding is always better than label encoding



✓ **Correct**

Correct! It's good idea to try both, if you don't have any better ideas to try.

4. What can be useful to do about missing values?

2 / 2 points

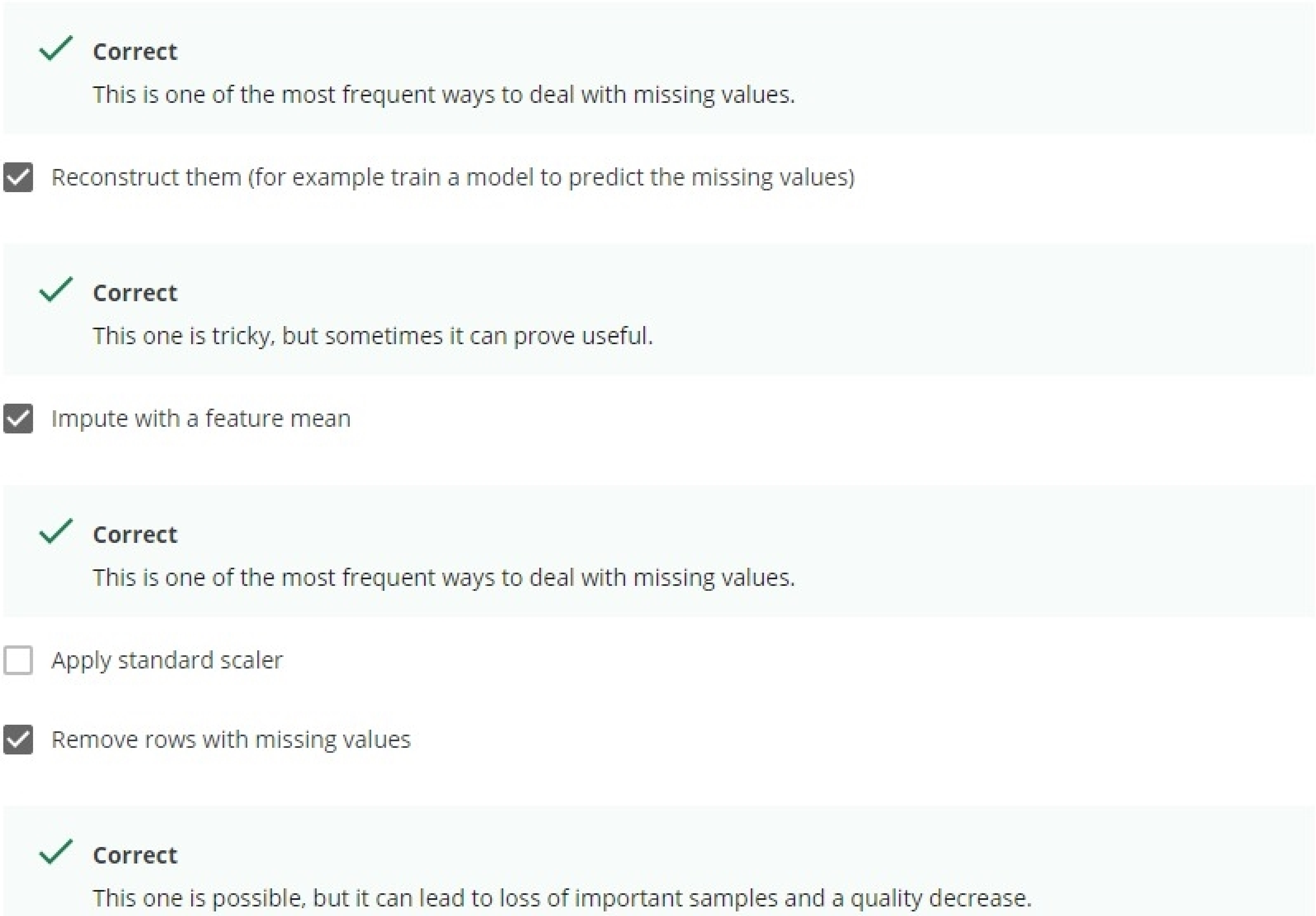
☐ Impute with feature variance

☑ Nothing, but use a model that can deal with them out of the box

✓ **Correct**

Some models like XGBoost and CatBoost can deal with missing values out-of-box. These models have special methods to treat them and a model's quality can benefit from it.

☑ Replace them with a constant (-1/-999/etc.)



✓ **Correct**

This is one of the most frequent ways to deal with missing values.

☑ Reconstruct them (for example train a model to predict the missing values)

✓ **Correct**

This one is tricky, but sometimes it can prove useful.

☑ Impute with a feature mean

✓ **Correct**

This is one of the most frequent ways to deal with missing values.

□ Apply standard scaler

☑ Remove rows with missing values

✓ **Correct**

This one is possible, but it can lead to loss of important samples and a quality decrease.