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1. Which of the following statements about model complexity is TRUE?

1 / 1 point

- ☐ Higher model complexity leads to a lower chance of overfitting.
- ☒ Higher model complexity leads to a higher chance of overfitting.
- ☐ Reducing the number of features while adding feature interactions leads to a lower chance of overfitting.
- ☐ Reducing the number of features while adding feature interactions leads to a higher chance of overfitting.

☒ **Correct**

Correct! You can find more information in the Bias Trade Off lesson.

2. Which of the following statements about model errors is TRUE?

1 / 1 point

- ☐ Underfitting is characterized by lower errors in both training and test samples.
- ☒ Underfitting is characterized by higher errors in both training and test samples.
- ☐ Underfitting is characterized by higher errors in training samples and lower errors in test samples.
- ☐ Underfitting is characterized by lower errors in training samples and higher errors in test samples.

☒ **Correct**

Correct! You can find more information in the Bias Trade Off lesson.

3. Which of the following statements about regularization is TRUE?

1 / 1 point

- ☐ Regularization always reduces the number of selected features.
- ☐ Regularization increases the likelihood of overfitting relative to training data.
- ☒ Regularization decreases the likelihood of overfitting relative to training data.
- ☐ Regularization performs feature selection without a negative impact in the likelihood of overfitting relative to the training data.

☒ **Correct**

Correct! You can find more information in the Regularization Techniques lesson.

4. Which of the following statements about scaling features prior to regularization is TRUE?

1 / 1 point

- ☐ Feature scaling is not recommended prior to regularization.
- ☐ Features should rarely or never be scaled prior to implementing regularization.
- ☒ The larger a feature's scale, the more likely its estimated impact will be influenced by regularization.
- ☐ The smaller a feature's scale, the more likely its estimated impact will be influenced by regularization.

☒ **Correct**

Correct! You can find more information in the Regularization Techniques lesson.

5. Which one of the 3 Regularization techniques: Ridge, Lasso, and Elastic Net, performs the fastest under the hood?

1 / 1 point

- ☒ Ridge
- ☐ Lasso
- ☐ Elastic Net
- ☐ None of the above

☒ **Correct**

Correct. You can find more information in the Polynomial Features and Regularization Demo.

6. Which of the following statements about Elastic Net regression is TRUE?

1 / 1 point

- ☒ Elastic Net combines L1 and L2 regularization.
- ☐ Elastic Net does not use L1 or L2 regularization.
- ☐ Elastic Net uses L2 regularization, as with Ridge regression.
- ☐ Elastic Net uses L1 regularization, as with Ridge regression.

✓ **Correct**

Correct! You can find more information in the Regularization Techniques lesson.

7. BOTH Ridge regression and Lasso regression

1 / 1 point

- ☐ Do not adjust the cost function used to estimate a model.
- ☒ Add a term to the loss function proportional to a regularization parameter.
- ☐ Add a term to the loss function proportional to the square of parameter coefficients.
- ☐ Add a term to the loss function proportional to the absolute value of parameter coefficients.

✓ **Correct**

Correct! You can find more information in the Regularization Techniques lessons.

8. Compared with Lasso regression (assuming similar implementation), Ridge regression is:

1 / 1 point

- ☐ Less likely to overfit to training data.
- ☐ More likely to overfit to training data.
- ☒ Less likely to set feature coefficients to zero.
- ☐ More likely to set feature coefficients to zero.

✓ **Correct**

Correct! You can find more information in the Regularization Techniques lessons.

9. Which of the following about Ridge Regularization is TRUE?

1 / 1 point

- ☐ It enforces the coefficients to be lower, but not 0
- ☐ It minimizes irrelevant features
- ☐ It penalizes the size magnitude of the regression coefficients by adding a squared term
- ☒ All of the above

✓ **Correct**

Correct! Incorrect! For more information review the Ridge Regression lesson.

10. Which of the below statements are correct?

1 / 1 point

- ☐ Neither RidgeCV nor LassoCV use L1 regularization function.
- ☐ Both RidgeCV and LassoCV use L1 regularization function.
- ☐ Only RidgeCV use L1 regularization function.
- ☒ Only LassoCV use L1 regularization function.

✓ **Correct**

Correct! You can find more information in the Polynomial Features and Regularization Demo.