1.
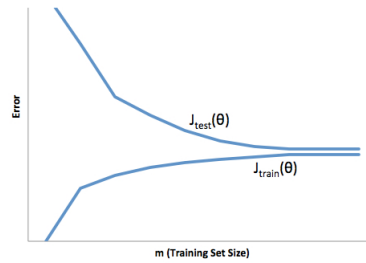
1 point

You train a learning algorithm, and find that it has unacceptably high error on the test set. You plot the learning curve, and obtain the figure below. Is the algorithm suffering from high bias, high variance, or neither?

- ⦿ High bias
- ○ Neither
- ○ High variance

2.

1 point

Suppose you have implemented regularized logistic regression to classify what object is in an image (i.e., to do object recognition). However, when you test your hypothesis on a new set of images, you find that it makes unacceptably large errors with its predictions on the new images. However, your hypothesis performs **well** (has low error) on the training set. Which of the following are promising steps to take? Check all that apply.

- ☐ Use fewer training examples.
- ☑ Get more training examples.
- ☑ Try using a smaller set of features.
- ☐ Try adding polynomial features.

3.

1 point

Suppose you have implemented regularized logistic regression to predict what items customers will purchase on a web shopping site. However, when you test your hypothesis on a new set of customers, you find that it makes unacceptably large errors in its predictions. Furthermore, the hypothesis performs **poorly** on the training set. Which of the following might be promising steps to take? Check all that apply.

- ☐ Try increasing the regularization parameter λ.
- ☐ Try using a smaller set of features.
- ☑ Try to obtain and use additional features.
- ☑ Try adding polynomial features.

4.

1 point

Which of the following statements are true? Check all that apply.

- ☐ Suppose you are training a regularized linear regression model.The recommended way to choose what value of regularization parameter λ to use is to choose the value of λ which gives the lowest **training set** error.
- ☑ Suppose you are training a regularized linear regression model. The recommended way to choose what value of regularization parameter λ to use is to choose the value of λ which gives the lowest **cross validation** error.
- ☑ The performance of a learning algorithm on the training set will typically be better than its performance on the test set.
- ☑ Suppose you are training a regularized linear regression model. The recommended way to choose what value of regularization parameter λ to use is to choose the value of λ which gives the lowest **test set** error.

5.

1 point

Which of the following statements are true? Check all that apply.

- ☐ If the training and test errors are about the same, adding more features will **not** help improve the results.
- ☑ If a learning algorithm is suffering from high variance, adding more training examples is likely to improve the test error.
- ☑ If a learning algorithm is suffering from high bias, only adding more training examples may **not** improve the test error significantly.

☐ A model with more parameters is more prone to overfitting and typically has higher variance.

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