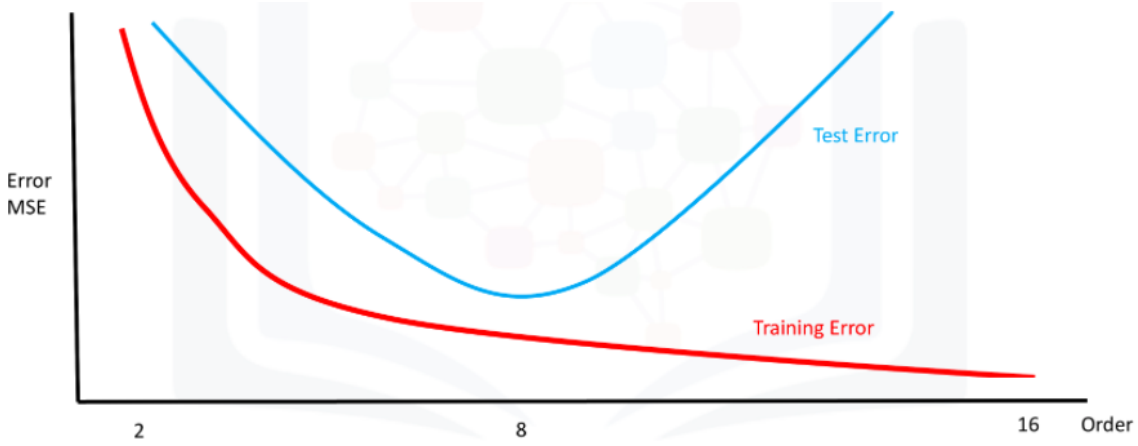
Quiz: Model Refinement

TOTAL POINTS 7

1. In the following plot, the vertical axis shows the mean square error and the horizontal axis represents the order of the polynomial. The red line represents the training error and the blue line is the test error. What is the best order of the polynomial given the possible choices in the horizontal axis? 1 point



- [x] 8
- [ ] 2
- [ ] 16

2. What is the output of the following code? 1 point

```
cross_val_score(lre, x_data, y_data, cv=2)
```

- [ ] The predicted values of the test data using cross-validation
- [ ] This function finds the free parameter alpha
- [x] The average R^2 on the test data for each of the two folds

3. What is the output of the following code? 1 point

```
cross_val_predict (lr2e, x_data, y_data, cv=3)
```

- (selected) The predicted values of the test data using cross-validation
- The average R^2 on the test data for each of the two folds
- This function finds the free parameter alpha

4. What dictionary value would we use to perform a grid search for the following values of alpha? 1,10, 100. No other parameter values should be tested — 1 point

```
alpha=[1,10,100]
```

(selected)

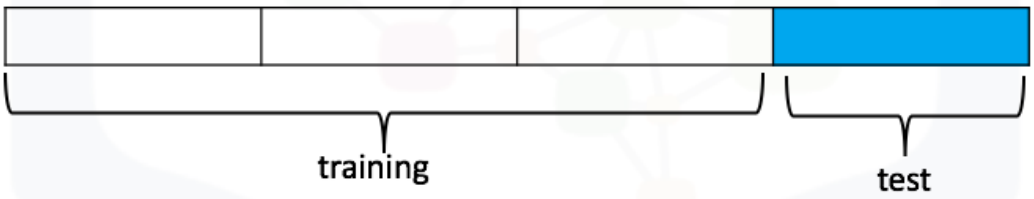
```
[{'alpha': [1,10,100]}]
```

```
[{'alpha': [0.001,0.1,1, 10, 100, 1000,10000,100000,100000],'normalize':[T
  ,False]} ]
```

5. You train a ridge regression model, you get a R^2 of 1 on your training data and you get a R^2 of 0 on your validation data; what should you do? — 1 point

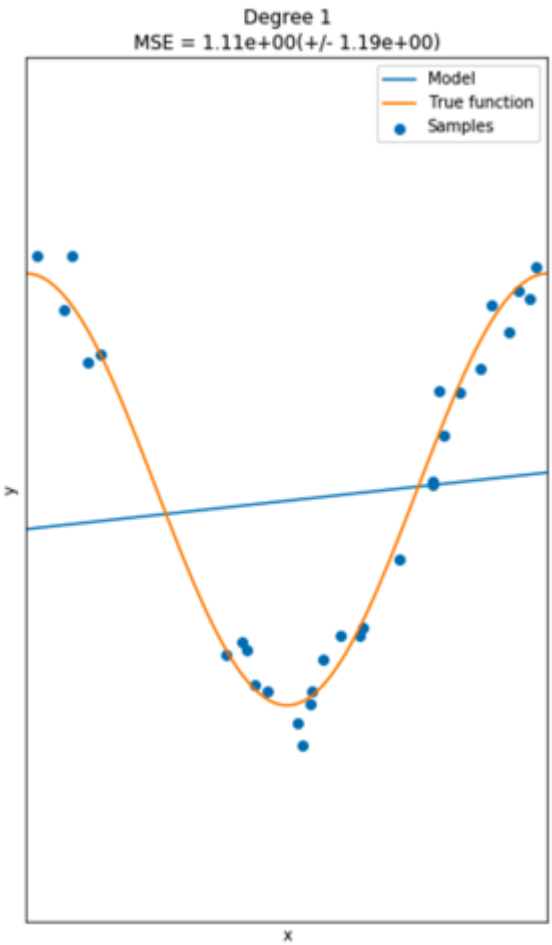
- Nothing, your model performs flawlessly on your validation data
- (selected) Your model is overfitting, so increase the parameter alpha
- Your model is under fitting; so perform a polynomial transform

6. Consider the following diagram of 4 fold cross-validation. From the diagram how many folds are used for training? — 1 point



- 4
- 3
- 1

7. The following is an example of what? 1 point



- Overfitting

- ○ Perfect fit
- ◉ Underfitting

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