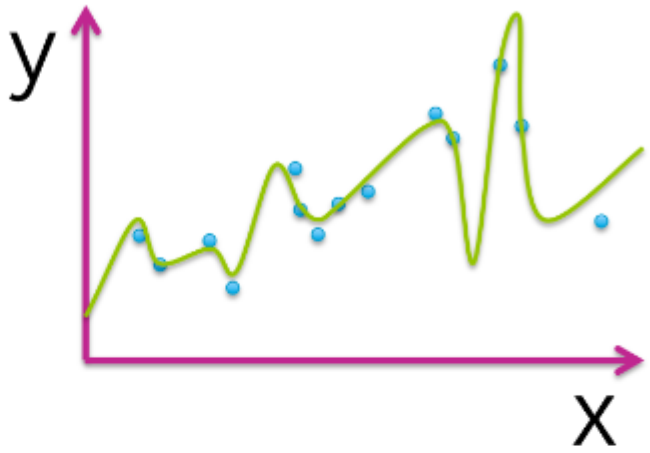
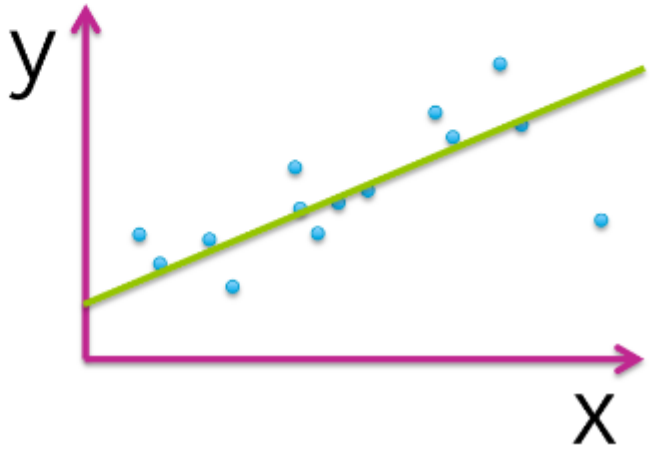
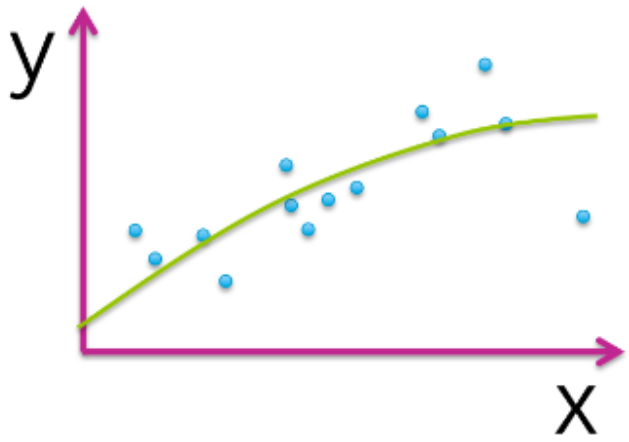
Quiz - Regression

1 point

1. Which figure represents an overfitted model?







1 point

2. ***True or false:*** The model that best minimizes training error is the one that will perform best for the task of prediction on new data.

- True
- False

1 point

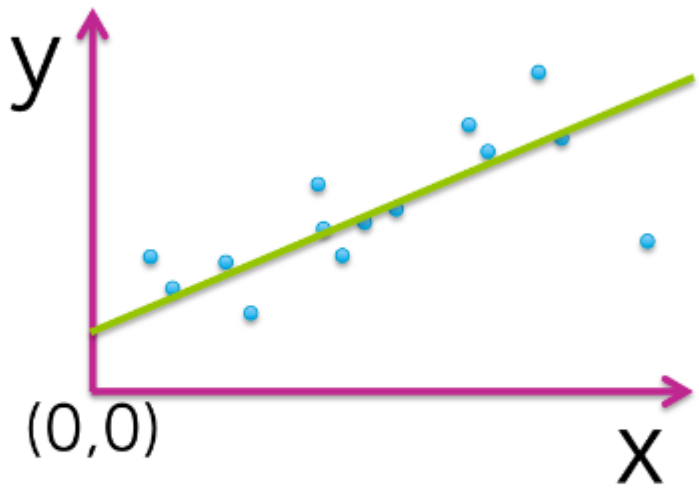
3. The following table illustrates the results of evaluating 4 models with different parameter choices on some data set. Which of the following models fits this data the best?

Model index	Parameters (intercept, slope)	Residual sum of squares (RSS)
1	(0,1.4)	20.51
2	(3.1,1.4)	15.23
3	(2.7, 1.9)	13.67
4	(0, 2.3)	18.99

- Model 1
- Model 2
- Model 3
- Model 4

1 point

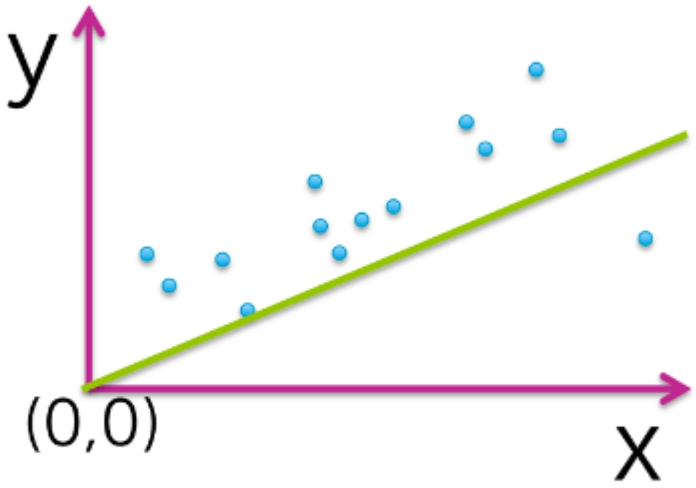
4. Assume we fit the following quadratic function: f(x) = w0+w1*x+w2*(x^2) to the dataset shown (blue circles). The fitted function is shown by the green curve in the picture below. Out of the 3 parameters of the fitted function (w0, w1, w2), which ones are estimated to be 0? *(Note: you must select all parameters estimated as 0 to get the question correct.)*



- [ ] w0
- [ ] w1
- [x] w2
- [ ] none of the above

1 point

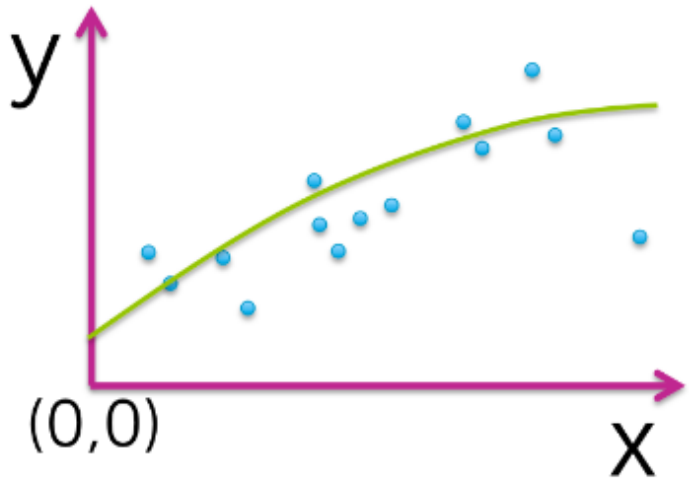
5. Assume we fit the following quadratic function: f(x) = w0+w1*x+w2*(x^2) to the dataset shown (blue circles). The fitted function is shown by the green curve in the picture below. Out of the 3 parameters of the fitted function (w0, w1, w2), which ones are estimated to be 0? *(Note: you must select all parameters estimated as 0 to get the question correct.)*



- [x] w0
- [ ] w1
- [x] w2
- [ ] none of the above

1 point

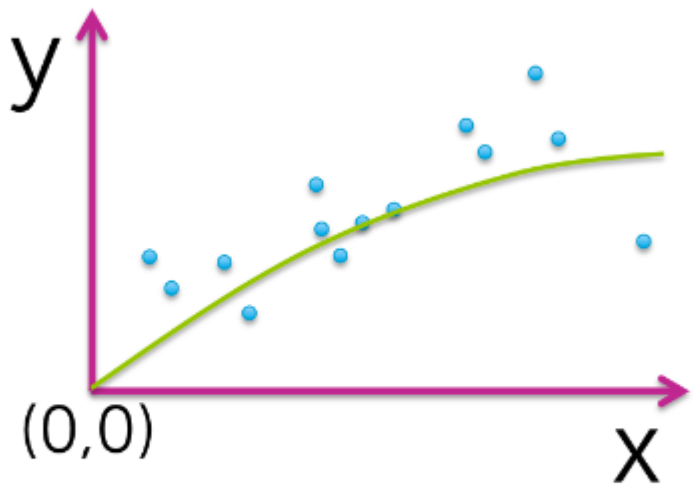
6. Assume we fit the following quadratic function: f(x) = w0+w1*x+w2*(x^2) to the dataset shown (blue circles). The fitted function is shown by the green curve in the picture below. Out of the 3 parameters of the fitted function (w0, w1, w2), which ones are estimated to be 0? *(Note: you must select all parameters estimated as 0 to get the question correct.)*



- [ ] w0
- [ ] w1
- [ ] w2
- [x] none of the above

1 point

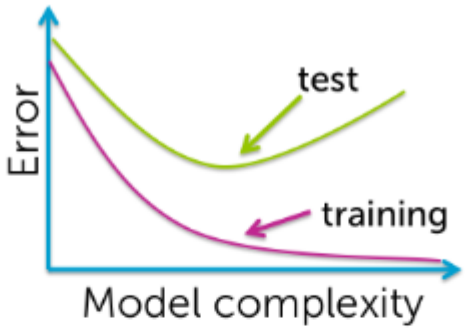
7. Assume we fit the following quadratic function: f(x) = w0+w1*x+w2*(x^2) to the dataset shown (blue circles). The fitted function is shown by the green curve in the picture below. Out of the 3 parameters of the fitted function (w0, w1, w2), which ones are estimated to be 0? *(Note: you must select all parameters estimated as 0 to get the question correct.)*

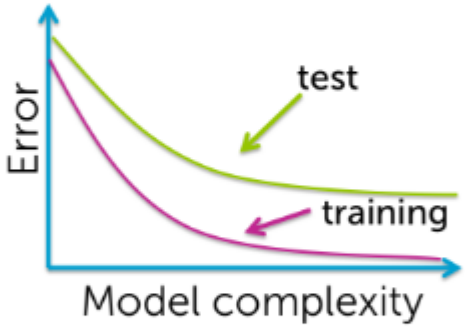


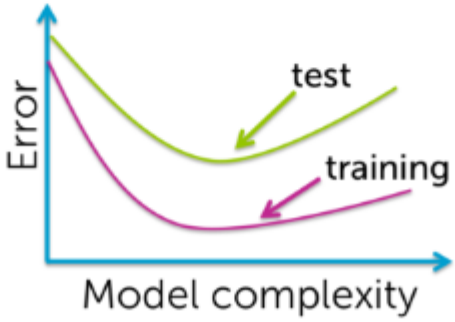
- [x] w0
- [ ] w1
- [ ] w2
- [ ] none of the above

1 point

8. Which of the following plots would you ***not*** expect to see as a plot of training and test error curves?







1 point

9. ***True or false:*** One always prefers to use a model with more features since it better captures the true underlying process.

- True
- False

Assignment - Predicting Housing Prices

Predicting house prices

Quiz, 3 questions

1 point

1. **Selection and summary statistics:** We found the zip code with the highest average house price. What is the average house price of that zip code?

- **$75,000**
- **$7,700,000**
- **$540,088**
- **$2,160,607**

1 point

2. **Filtering data:** What fraction of the houses have living space between 2000 sq.ft. and 4000 sq.ft.?

- **Between 0.2 and 0.29**
- **Between 0.3 and 0.39**
- **Between 0.4 and 0.49**
- **Between 0.5 and 0.59**
- **Between 0.6 and 0.69**

1 point

3. **Building a regression model with several more features:** What is the difference in RMSE between the model trained with *my_features* and the one trained with *advanced_features*?

- **the RMSE of the model with advanced_features lower by less than $25,000**
- **the RMSE of the model with advanced_features lower by between $25,001 and $35,000**
- **the RMSE of the model with advanced_features lower by between $35,001 and $45,000**
- **the RMSE of the model with advanced_features lower by between $45,001 and $55,000**
- **the RMSE of the model with advanced_features lower by more than $55,000**