From the section "Effect of L1 penalty": Consider the simple model with 2 features trained on the entire sales dataset.

***Which of the following values of l1\_penalty would not set w[1] zero, but would set w[2] to zero, if we were to take a coordinate gradient step in that coordinate? (Select all that apply)***



1.4e8



1.64e8



1.73e8



1.9e8



2.3e8

Question 2

1

point

**2. Question 2**

Refer to the same model as the previous question.

***Which of the following values of l1\_penalty would set both w[1] and w[2] to zero, if we were to take a coordinate gradient step in that coordinate? (Select all that apply)***



1.4e8



1.64e8



1.73e8



1.9e8



2.3e8

Question 3

1

point

**3. Question 3**

From the section "Cyclical coordinate descent": Using the simple model (with 2 features), we run our implementation of LASSO coordinate descent on the normalized sales dataset. We apply an L1 penalty of 1e7 and tolerance of 1.0.

***Which of the following ranges contains the RSS of the learned model on the normalized dataset?***



Between 8e13 and 2e14



Between 2e14 and 5e14



Between 5e14 and 8e14



Between 8e14 and 1e15



Between 1e15 and 3e15

Question 4

1

point

**4. Question 4**

Refer to the same model as the previous question.

***Which of the following features were assigned a zero weight at convergence?***



constant



sqft\_living



bedrooms

Question 5

1

point

**5. Question 5**

In the section "Evaluating LASSO fit with more features", we split the data into training and test sets and learn weights with varying degree of L1 penalties. The model now has 13 features.

***In the model trained with l1\_penalty=1e7, which of the following features has non-zero weight? (Select all that apply)***



constant



sqft\_living



grade



waterfront



sqft\_basement

Question 6

1

point

**6. Question 6**

This question refers to the same model as the previous question.

***In the model trained with l1\_penalty=1e8, which of the following features has non-zero weight? (Select all that apply)***



constant



sqft\_living



grade



waterfront



sqft\_basement

Question 7

1

point

**7. Question 7**

This question refers to the same model as the previous question.

***In the model trained with l1\_penalty=1e4, which of the following features has non-zero weight? (Select all that apply)***



constant



sqft\_living



grade



waterfront



sqft\_basement

Question 8

1

point

**8. Question 8**

In the section "Evaluating each of the learned models on the test data", we evaluate three models on the test data. The three models were trained with same set of features but different L1 penalties.

***Which of the three models gives the lowest RSS on the TEST data?***



The model trained with 1e4



The model trained with 1e7



The model trained with 1e8