**Using LASSO to select features**

6 questions

1. We learn weights on the entire house dataset, using an L1 penalty of 1e10 (or 5e2, if using scikit-learn). Some features are transformations of inputs; see the reading.

***Which of the following features have been chosen by LASSO, i.e. which features were assigned nonzero weights? (Choose all that apply)***

yr\_renovated  
waterfront  
**sqft\_living  
grade**floors

2. We split the house sales dataset into training set, test set, and validation set and choose the l1\_penalty that minimizes the error on the validation set.

***In which of the following ranges does the best l1\_penalty fall?***

**Between 0 and 100**Between 100 and 1000  
Between 1000 and 10000  
Between 10000 and 100000  
Greater than 100000

3. ***Using the best value of l1\_penalty as mentioned in the previous question, how many nonzero weights do you have?***

17 (wrong)  
16 (wrong)

4. We explore a wide range of l1\_penalty values to find a narrow region of l1\_penaty values where models are likely to have the desired number of non-zero weights (max\_nonzeros=7).

***What value did you find for l1\_penalty\_min?***  
2976000000 (wrong)  
***What value did you find for l1\_penalty\_max?***  
3793000000

5. We then explore the narrow range of l1\_penalty values between l1\_penalty\_min and l1\_penalty\_max.

***What value of l1\_penalty in our narrow range has the lowest RSS on the VALIDATION set and has sparsity equal to max\_nonzeros?***

***If you are using GraphLab Create, enter your answer in simple decimals without commas (e.g. 1131000000), rounded to nearest millions.***  
3449000000 (wrong)

6. ***Consider the model learned with the l1\_penalty found in the previous question. Which of the following features has non-zero coefficients? (Choose all that apply)***

**sqft\_living**bedrooms\_square  
sqft\_lot\_sqrt  
**bathrooms**floors