**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

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

18

**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\_max?***

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

***If you are using scikit-learn, enter your answer in simple decimals without commas (e.g. 4313), rounded to nearest integer.***

3792690190

**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.***

***If you are using scikit-learn, enter your answer in simple decimals without commas (e.g. 4342), rounded to nearest integer.***

3448968612

**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