1. **What is the optimal value of alpha for ridge and lasso regression? What will be the changes in the model if you choose double the value of alpha for both ridge and lasso? What will be the most important predictor variables after the change is implemented?**

   Optimal Alpha value for Ridge regression is 10 and for Lasso regression is 0.
   If we double the alpha values, the r2 scores go on reducing.
   The coefficient values change when the alpha changes.
   For Ridge Regression:
      For Alpha = 10, LotArea has the highest coefficient
      For Alpha = 20, Fireplaces has the highest coefficient
   For Lasso Regression:
      For Alpha = 0,   LotArea is the most important predictor
      For Alpha = 0.01, Fireplaces is the most important predictor

2. **You have determined the optimal value of lambda for ridge and lasso regression during the assignment. Now, which one will you choose to apply and why?**

   I will choose Lasso Regression because the lambda value for lasso is smaller and also the scores are not very different. Lasso also does feature selection.

3. **After building the model, you realised that the five most important predictor variables in the lasso model are not available in the incoming data. You will now have to create another model excluding the five most important predictor variables. Which are the five most important predictor variables now?**

   5 most important predictor variables before:
      ImStucc, MasVnrArea, StoneBr, PosA, LotArea
   5 most important predictor variables after:
      YearRemodAdd, PoolArea, FirePlaces, MasVnrArea, LotArea

4. **How can you make sure that a model is robust and generalisable? What are the implications of the same for the accuracy of the model and why?**

   Make sure that model doesn't overfit on the training data. Keep the model as simple as possible. Experiment with various lambda values for both Lasso and Ridge Regression. General models will have slightly less accuracy since the model is not very complex.