1. Use the $predict$ function in R to predict $log(price)$ in the testing data set ($ames\_test$).   **1 / 1 point**
   Under $model.AIC$, what is the mean predicted price in the testing data set?

   ○ $12.02

   ○ $166,721.30

   ○ $172,994.50

   ◉ $177,220.30

   ✓ **Correct**
   This question refers to the following learning objective(s):

   Extrapolate a model to out-of sample data.

2. Which of the following statements is true concerning the RMSE of $model.full$ and   **1 / 1 point**
   $model.AIC$?

   ○ When predicting to $ames_train$, the RMSE for $model.full$ is higher than the RMSE for
   $model.AIC$. However, when predicting to $ames\_test$, the RMSE for $model.AIC$ is
   higher.

   ◉ When predicting to $ames_train$, the RMSE for $model.AIC$ is higher than the RMSE
   for $model.full$. However, when predicting to $ames\_test$, the RMSE for $model.full$
   is higher.

   ○ The RMSE for $model.full$ is higher than the RMSE for $model.AIC$, regardless of
   whether $ames\_train$ or $ames\_test$ is used for prediction.

   ○ The RMSE for $model.AIC$ is higher than the RMSE for $model.full$, regardless of
   whether $ames\_train$ or $ames\_test$ is used for prediction.

   ✓ **Correct**
   This question refers to the following learning objective(s):

   - Extrapolate a model to out-of sample data.
   - Compare the performance of multiple models.

3. True or False: In general, the RMSE for predictions on a training data set will be higher than that for predictions on a testing data set.   **1 / 1 point**

  ○ True

  ◉ False

     ✓ **Correct**
       This question refers to the following learning objective(s):

       Extrapolate a model to out-of sample data.

4. Create a new model entitled $model.BIC$ that uses BIC to select the covariates from $model.full.$ What is the out-of-sample coverage for $model.BIC$?   **1 / 1 point**

  ○ 0.948

  ◉ 0.950

  ○ 0.952

  ○ 0.961

     ✓ **Correct**
       This question refers to the following learning objective(s):

       • Check the assumptions of a linear model.
       • Extrapolate a model to out-of sample data.

5. Which of the following prediction methods has the smallest out-of-sample RMSE?   **1 / 1 point**

  ◉ HPM

  ○ BPM

  ○ BMA

     ✓ **Correct**

This question refers to the following learning objective(s):

- Extrapolate a model to out-of sample data.
- Implement Bayesian model averaging for both prediction and variable selection.

6. Using the median probability model to generate out-of-sample predictions and a 95% prediction interval, what proportion of observations (rows) in $ames\_test$ have sales prices that fall outside the prediction intervals?

1 / 1 point

- ○ 0.048
- ● 0.049
- ○ 0.050
- ○ 0.051

✓ **Correct**

This question refers to the following learning objective(s):

- Extrapolate a model to out-of sample data.
- Implement Bayesian model averaging for both prediction and variable selection.

7. True or False: The median probability model has a tendency to over-predict prices for the most expensive houses.

1 / 1 point

- ○ True
- ● False

✓ **Correct**

This question refers to the following learning objective(s):

Extrapolate a model to out-of sample data.