MTH 4230 Lab 6 **Answer Sheet**

Due Wed., Apr. 15

1 Part A

1.1 Real Estate Data

1. NA

2. We only test significance of a **lower-order** term if it **isn't** involved in a significant **higher-order** interaction.

   If a **higher-order** interaction is significant, all lower-order terms involved in that interaction are related to the response, ***regardless*** of their **p-values**, and therefore should be kept in the model. If it's *not* significant, we proceed to tests of the lower-order terms.

   a) Use the results of the ***t* test** to decide whether the `Age:Vac.Rate:Sq.Ft` interaction is significant. Fill in the following values:

   $t =$ _____

   P-value = _____.

   Based on the results of the ***t* test**, is the `Age:Vac.Rate:Sq.Ft` interaction significant (Yes/No)? _____.

   b) Because the `Age:Vac.Rate:Sq.Ft` interaction *isn't* significant, we have **two options**:

   - Drop `Age:Vac.Rate:Sq.Ft` from the model (i.e. **refit** the model without it).
   - Leave `Age:Vac.Rate:Sq.Ft` in the model and proceed to tests of lower order terms.

   We'll use the second approach (i.e. leave `Age:Vac.Rate:Sq.Ft` in the model).

   Based on the results of the ***t* tests**:

   Is the `Age:Vac.Rate` interaction significant (Yes/No)? _____.

   Is the `Age:Sq.Ft` interaction significant (Yes/No)? _____.

   Is the `Vac.Rate:Sq.Ft` interaction significant (Yes/No)? _____.

3. NA

4. For the final model, based on the results of the ***t* tests**:

   Is the `Age:Vac.Rate` term significant (Yes/No)? _____.

   Is the `Sq.Ft` term significant (Yes/No)? _____.

   (Note that it doesn't make sense to try use the results of the ***t* tests** for `Age` and `Vac.Rate` because they're involved in a significant interaction effect.)