***Activity Lab 4:*** Use the lecture script as a model to help you.

**Descriptive Statistics: describe the variables:**

* Prompts: continuous / categorical? Levels? Which one is the reference level if categorical?
* Report the outcome variable (Y)
* Report the predictor variables (Xs)
* Summary stats for continuous variables = calculate and report the mean and sd values for each variable.

**Mediation analysis – 4 step approach**

Step 1: Total effect: Run the code and write a short paragraph of results

Step 2: Indirect effect path a: Run the code and write a short paragraph of results.

Step 3 & 4: Indirect effect path b and direct effect path: Run the code and write a short paragraph of results.

**Questions**

1. Is there a total effect?
   1. Value:
2. Is there an indirect path effect for X predicting the mediator M?
   1. Value:
   2. Is there an effect for indirect path of mediator M on outcome Y?
      1. Value:
   3. Is there an effect of direct path of X on Y?
      1. Value:
3. Is there a mediated effect of coffee on problem solving?
4. If so, what type of mediation is it?
   1. Why have you decided that type of mediation?

**Bootstrap method**

Run the bootstrap method

Report the following values to 2 dp.

1. What is the average causal mediation effect value?
   1. Value:
2. What is the average direct effect value?
   1. Value:
3. What is the total effect value?
   1. Value:
4. What proportion of variance goes through the indirect pathway?
   1. Value:

Draw the mediation analysis diagram with the correct values on the pathways.

Report the bootstrap analysis and the results.