1. Which of the following statements regarding permutation tests and/or bootstrapping is true?

a. Bootstrapping is a “resampling” method, while the permutation test is not.

b. Bootstrapping is used for hypothesis testing, while permutation tests are used to calculate uncertainty in your coefficient estimate.

c. Both methods are advantageous when parametric assumptions are invalid.

2. QQ-plots are used to check which of the following linear regression assumptions? (You can check more than one.)

a. Constant variance of errors.

b. Errors are uncorrelated.

c. The errors are normally distributed.

d. A linear relation exists.

3. A data scientist tells you that she has data on a maturity index measured on children between 5 and 15 years of age. She says that on average kids appear to gain maturity as they get older, but that her exploratory data analyses have shown that the rates at which boys and girls mature is different. She would like to estimate these different rates for boys and girls using a regression model. What would you recommend she add to a model that has maturity predicted by age only? (Check all that apply)

a. a single main-effect predictor of sex.

b. a main-effect predictor of sex and an interaction term that multiplies sex and age together.

c. an interaction term that multiplies sex and age together

d. none of the above

4. T/F Statistical inference can be difficult in sequential model building since the final model does not provide an accurate picture of the entire model building process.