1. The Akaike Information Criterion (AIC) is derived from a metric that measures how close a candidate model is from the "true" model. 3 / 3 points

True

False

2. The AIC for linear regression can be written as 3 / 3 points

$$AIC = 2(p+1) + n\left(\log(RSS) - \log(n)\right),$$

where RSS is the residual sum of squares for the model, and p is the number of predictors in the model.

True

False

3. The AIC strikes a balance between: 4 / 4 points

The number of units in the dataset and the number of predictors in the dataset.

The residual sum of squares and the number of predictors in the model

Model fit and model complexity

The residual sum of squares and the number of parameters in the model

4. The Bayes Information Criterion (BIC) strikes a balance between: 4 / 4 points

The residual sum of squares and the number of predictors in the model

The residual sum of squares and the number of parameters in the model

Model fit and complexity

The number of units in the dataset and the number of predictors in the dataset.

5. If AIC has ben chosen as the best model selection criterion, then given several candidate models, one should choose the model with the highest AIC. 3 / 3 points

True

False

6. If BIC has ben chosen as the best model selection criterion, then given several candidate models, one should choose the model with the lowest BIC. 3 / 3 points

True

False

7. If the adjusted R^2 has ben chosen as the best model selection criterion, then given several candidate models, one should choose the model with the lowest adjusted R^2. 3 / 3 points

True

False

8. For a dataset with $n > 8$ rows, the AIC favors smaller models. 3 / 3 points

True

False

9. For a dataset with $n > 8$ rows, the penalty for adding parameters is higher for BIC than AIC. 3 / 3 points

True

False

10. R^2 and R_a^2 are the same when comparing models with the same number of predictors. 3 / 3 points

True

False