

Assessing Performance

13 questions

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1.

If the features of Model 1 are a strict subset of those in Model 2, the TRAINING error of the two models can **never** be the same.

- ☒ True
- ☐ False
-

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2.

If the features of Model 1 are a strict subset of those in Model 2, which model will USUALLY have lowest TRAINING error?

- ☒ Model 1
 - ☐ Model 2
 - ☐ It's impossible to tell with only this information
-

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3.

If the features of Model 1 are a strict subset of those in Model 2, which model will USUALLY have lowest TEST error?

- ☒ Model 1
 - ☐ Model 2
 - ☐ It's impossible to tell with only this information
-

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4.

If the features of Model 1 are a strict subset of those in Model 2, which model will USUALLY have lower BIAS?

- ☐ Model 1
- ☒ Model 2

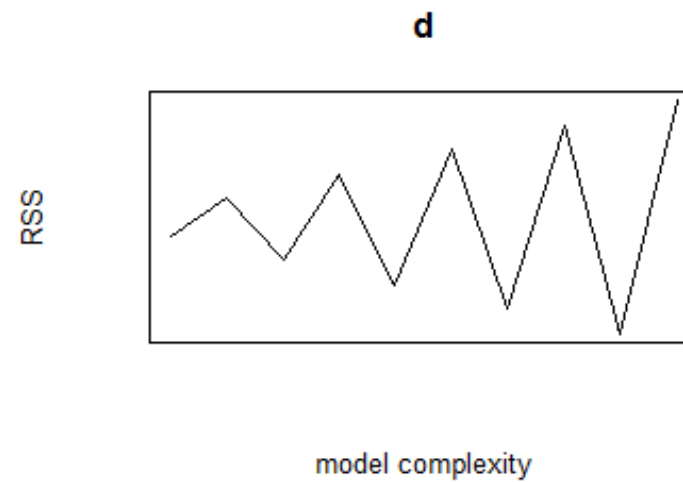
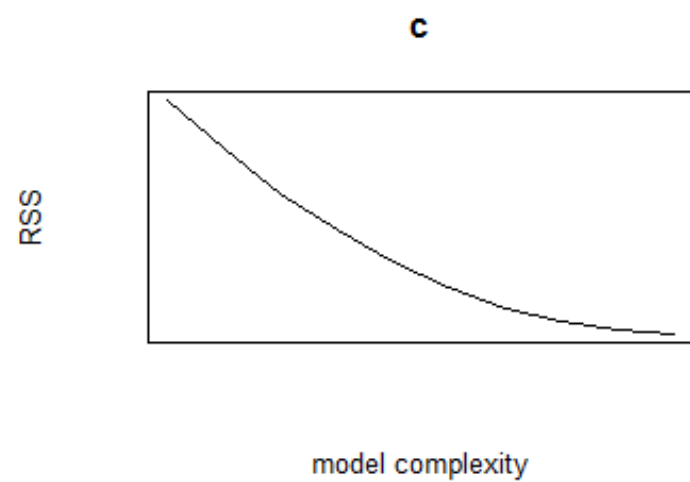
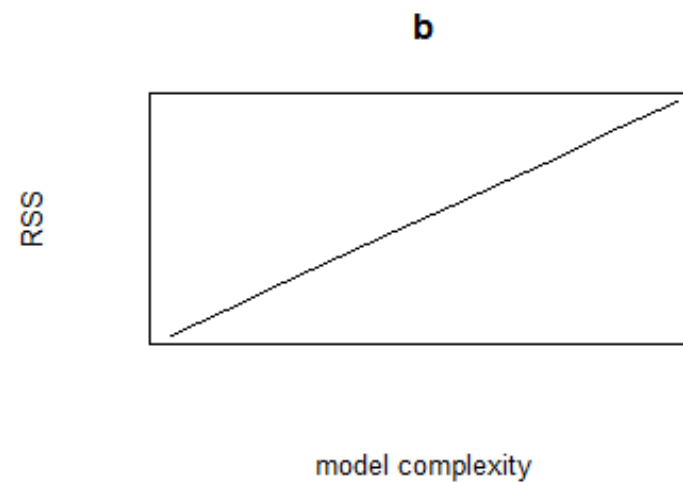
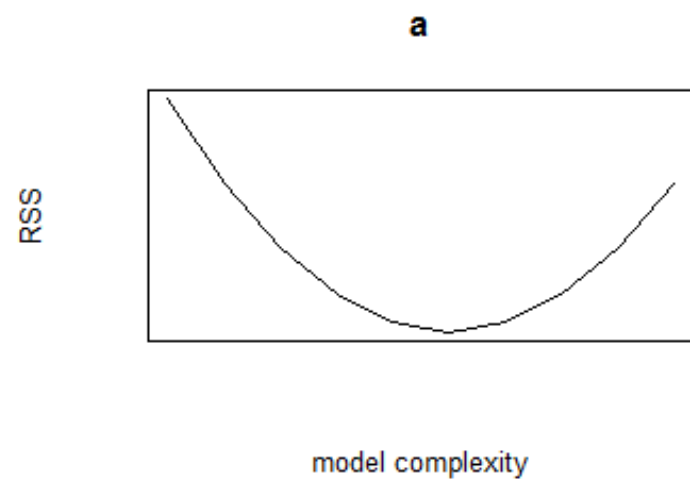


It's impossible to tell with only this information

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5.

Which of the following plots of model complexity vs. RSS is most likely from TRAINING data (for a fixed data set)?



☐ a

☐ b

☐ c

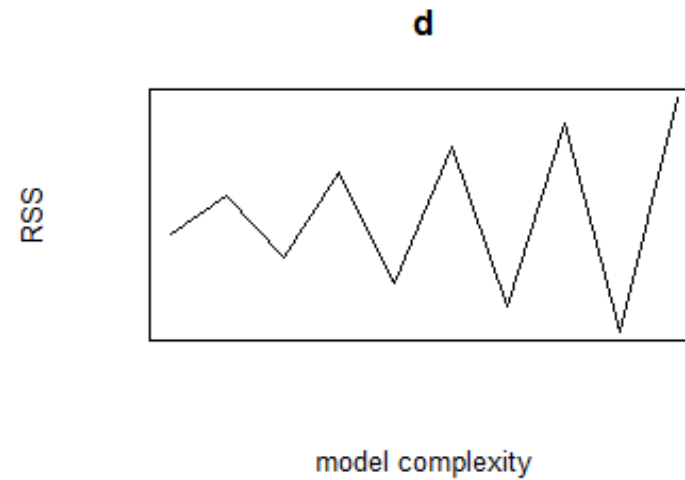
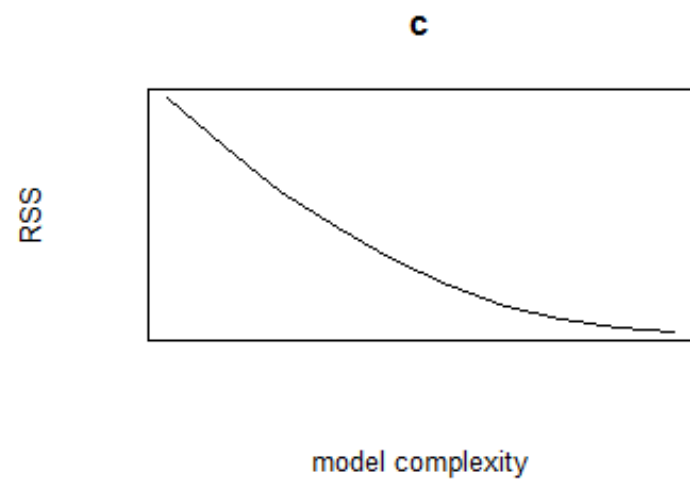
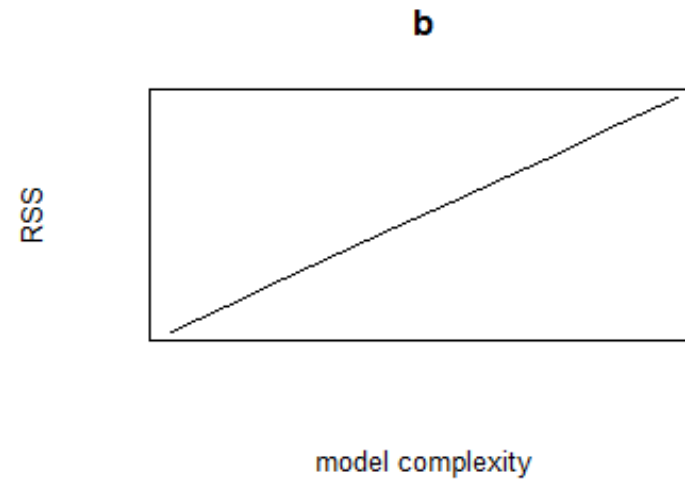
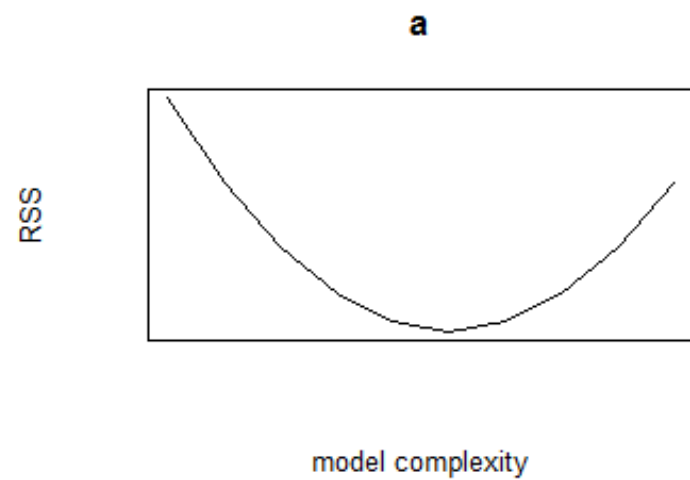
☐ d

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6.

Which of the following plots of model complexity vs. R^2 is most likely from TEST data (for a fixed data set)?

which of the following plots of model complexity vs. RSS is most likely from TEST data (for a fixed data set)?



- ☒ a
 - ☐ b
 - ☐ c
 - ☐ d
-

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7.

It is **always** optimal to add more features to a regression model.

- ☐ True
 - ☐ False
-

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8.

A simple model with few parameters is most likely to suffer from:

- ☐ High Bias
 - ☐ High Variance
-

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9.

A complex model with many parameters is most likely to suffer from:

- ☒ High Bias
 - ☐ High Variance
-

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10.

A model with many parameters that fits training data very well but does poorly on test data is considered to be

- ☒ accurate
 - ☐ biased
 - ☐ overfitted
 - ☐ poorly estimated
-

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11.

A common process for selecting a parameter like the optimal polynomial degree is:

-
- ☐ Bootstrapping
 - ☐ Model estimation
 - ☐ Multiple regression
 - ☐ Minimizing test error
 - ☐ Minimizing validation error
-

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12.

Selecting model complexity on test data (choose all that apply):

- ☐ Allows you to avoid issues of overfitting to training data
 - ☐ Provides an overly optimistic assessment of performance of the resulting model
 - ☐ Is computationally inefficient
 - ☐ Should never be done
-

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13.

Which of the following statements is true (select all that apply): For a **fixed model complexity**, in the limit of an infinite amount of training data,

- ☐ The noise goes to 0
 - ☐ Bias goes to 0
 - ☐ Variance goes to 0
 - ☐ Training error goes to 0
 - ☐ Generalization error goes to 0
-

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