Class 7 Clicker Question 1

Should Rate be in the model?

A Yes, because it is highly statistically significant

B No, because it is not statistically significant

C Yes, because $\hat{\beta}_2 > \hat{\beta}_1$

D Yes, because $\hat{\beta}_2$ has the smallest standard error

E I can't say, because this output does not answer that question.

Class 7 Clicker Question 2

What is the null hypothesis?

A H_0 : the second model fits better

B H_0 : the two models fit the same

C $H_0 : \beta_2 \neq 0$

D $H_0 : \beta_2 = 0$

E H_0 : the deviance is smaller for the second model.

Class 7 Clicker Question 3

What is W, i.e., the change in deviance between the two models?

A -17.2

B 17.2

C 29.772

D 46.989

E 24.3

Class 7 Clicker Question 4

To test H_0, how many degrees of freedom are used in the χ^2 distribution?

A 38

B 37

C 36

D 2

E 1

Class 7 Clicker Question 5

Is H_0 rejected?

A I don't know: I need to know the significance level

B I don't know: I need to look up a χ^2 critical value

C Yes

D No

E Yes at significance level 0.05.

Class 7 Clicker Question 6

Which model predicts the training data better?

A $Y \sim \text{Volume}$

B $Y \sim \text{Volume} + \text{Rate}$

C $Y \sim \text{Rate}$

D I cannot tell from this table

E I don't know.

Class 7 Clicker Question 7

What is the best explanation of why the Volume + Rate model seems to predict the (cross-validation) test data better?

A A model with extra terms will always predict better under cross validation

B Because it is more flexible

C Overall the reduction in the biases of the predictions outweighs the increase in the variances of the predictions

D Overall the reduction in the variances of the predictions outweighs the increase in the biases of the predictions

E Overall it has reduced both the biases and the variances of the predictions.