What does the R^2 tell us about our model?

The R^2 captures the *strength* of a linear regression model, but it's important to interrogate exactly what that does (and doesn't) mean:

1. The R^2 for the double-log-transformed model of movie budget and total gross is 0.435, while the R^2 for the non-transformed model is $R^2 = 0.536$.

2. Does the larger R^2 value mean that the *non-transformed* model actually does a better job of describing the data?

3. Does it make sense to compare these two R^2 values? Why or why not?

4. Other simple linear regression models that we've looked at in class have had R^2 values of 0.110 (the butterfly model) and 0.051 (the Vietnam War draft model).

5. Does a small R^2 value mean that a particular model is a *bad* model?

6. Does the size of the R^2 value tell us about the significance of the relationship between x and Y?

7. If not, what does a small R^2 value suggest?