Multiple Regression

4/9 points earned (44%)

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Review the material and try again! You have 3 attempts every 8 hours.

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1 / 1 points

1. Which of the following is **NOT** a **linear** regression model. *Hint: remember that a linear regression model is always linear in the parameters, but may use non-linear features.*

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0 / 1 points

2. Your estimated model for predicting house prices has a large positive weight on 'square feet living'. This implies that if we remove the feature 'square feet living' and refit the model, the new predictive performance will be **worse** than before.

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0 / 1 points

3. *Complete the following:* Your estimated model for predicting house prices has a positive weight on 'square feet living'. You then add 'lot size' to the model and re-estimate the feature weights. The new weight on 'square feet living' [_____] be positive.

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0 / 1 points

4. If you double the value of a given feature (i.e. a specific column of the feature matrix), what happens to the least-squares estimated coefficients for every **other** feature? (assume you have no other feature that depends on the doubled feature i.e. no interaction terms).

✔

1 / 1 points

5. Gradient descent/ascent is...

✔

1 / 1 points

6. Gradient descent/ascent allows us to...

✖

0 / 1 points

7. Which of the following statements about step-size in gradient descent is/are **TRUE** (select all that apply)

✔

1 / 1 points

8. Let's analyze how many computations are required to fit a multiple linear regression model *using the closed-form solution* based on a data set with 50 observations and 10 features. In the videos, we said that computing the inverse of the 10x10 matrix (H^T)H was on the order of D^3 operations. Let's focus on forming this matrix **prior** to inversion. How many multiplications are required to form the matrix (H^T)H?

Please enter a number below.

✖

0 / 1 points

9. More generally, if you have D features and N observations what is the total complexity of computing ((H^T)H)^(-1)?