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Notes: we decided to not use some features in our model for the following reasons:

- Name: it is irrelevant to the label we are trying to predict, also to avoid overfitting.
- Seller-type: non-primary factor to the label and may lead to overcomplication in the model.

We also did some data cleaning by removing Nan values.

Linear Regression:

- Multi-feature equation:

```
MSE:  218929406055.62943
RMSE:  467898.9271793957
MAE:  312976.0537353477
```

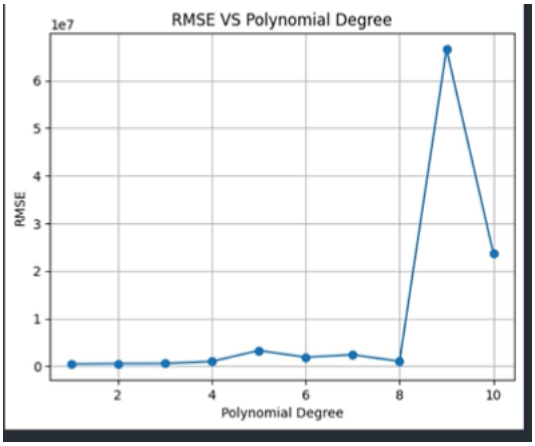
- Gradient Descent:

```
MSE:  230276264993.25314
RMSE:  479871.09205832885
MAE:  282071.31510551943
```

We would naturally choose both as they complement each other , but if we have to choose one, we tend to favor the multi-feature equation more as it has a lower RMSE and we realized upon inspection that the residual errors are in large numbers which must be taken into account and RMSE does that better than MAE hence we choose Multi-feature equation.

Polynomial Regression:

- RMSE values:



As shown from the plot above it is clear that a degree of 1 is optimal to our case as it has the least RMSE value of 467898, after the 8th degree it is clear that the model undergoes overfitting hence 1 is more optimal as it is less complex.