Bryan Faryadi (801178567) - Homework 1

- 1.3 X1 has the lowest loss for explaining the output by a large margin. It settles around 0.985, compared to 3.6 and 3.63 for X2 and X3 respectively.
- 1.4 Based on my training observations for X1, final loss goes down when training rate or iterations increase. However, the effect of a higher training rate becomes insignificant with enough iterations. For example, at 1500 iterations, a training rate of 0.1 had a lower final loss of roughly 0.005 compared to a training rate of 0.01. However, at 4500 iterations, the difference was only 0.00000001. Results are similar for X2 and X3.
- 2.3 At 4500 iterations, the difference in final loss between a 0.01 and 0.1 training rate is ~0.00018. This is greater than the difference for just X1, but still insignificant. Using 1500 iterations, however, the difference between 0.01 and 0.1 is ~0.072, which is much more significant. We can see that the training rate matters more with a higher number of explanatory variables, and that many more iterations are required in order to begin converging toward a lower final loss value.