a.

The K-Nearest Neighbor model would be able to train faster than the Polynomial Regression model. For KNN, the computation of the prediction is done at the instance it is being trained upon. The model simply stores each of the predicted values at each instance it made the prediction at. This is not the case for Polynomial Regression, where the model computes the coefficients of a polynomial equation that best fits the data the algorithm was being trained upon. This process is computationally intensive and expensive, hence is why Polynomial Regression takes much longer to train than KNN.

b.

In terms of prediction time, the Polynomial Regression model is faster, where the prediction simply involves evaluating a polynomial equation with already trained coefficients to best fit the data. This is not the case for KNN as at each instance, the model must calculate the distance between the testing data and the training data for each prediction.

c.

The Polynomial Regression would probably have a larger filesize, because the model has stored all the coefficients of the polynomial equation. The filesize can get seemingly large especially for a polynomial that has a high degree and the number of features is large.