Math 5364 Homework 9

1. Verify that for $\beta = 0, 1, \infty$, F_β is equal to p, F_1, r, respectively.
2. Find weights w_i, $i = 1, \ldots, 4$, such that weighted accuracy is equal to the given performance metric.
   (a) Accuracy
   (b) Sensitivity
   (c) Specificity
   (d) Precision
   (e) Recall
   (f) F_β
3. Split `germancredit.csv` into 70% training and 30% test data.
   (a) Fit a naive Bayes classifier for predicting default, and calculate the accuracy, sensitivity, specificity, precision, and F_1 measure on the test data.
   (b) Find the probability threshold p_0 that optimizes the F_1 measure on the training data.
   (c) Recalculate the accuracy, sensitivity, specificity, precision, and F_1 measure on the test data using the new probability threshold.