Homework 5 Austin Frownfelter

# Problem 1

## (D)

The training and test misclassification errors were 0.2988 and 0.2722, respectively.

|  |  |  |
| --- | --- | --- |
| Predict\Target (Train) | 1 | 0 |
| 1 | 118 | 42 |
| 0 | 82 | 297 |

|  |  |  |
| --- | --- | --- |
| Predict\Target (Test) | 1 | 0 |
| 1 | 46 | 27 |
| 0 | 22 | 134 |

Sensitivity (test): 0.6765

Specificity (test): 0.8323

## (E)

For the schedule, the gradient would converge after 30,000 epochs. For a schedule, it converged after only ~200 epochs. The initial starting weights of all 1’s and weights of all 0’s converged in the same time. Even starting weights of 100’s and -100’s converged in the same time. In all cases, the convergence point was with a test misclassification error of 0.2722 and training error of 0.2988.

# Problem 2