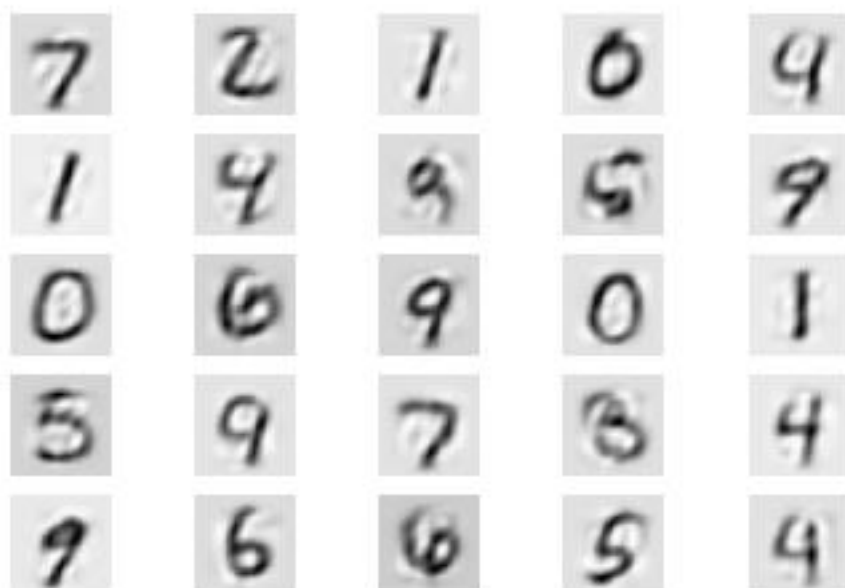


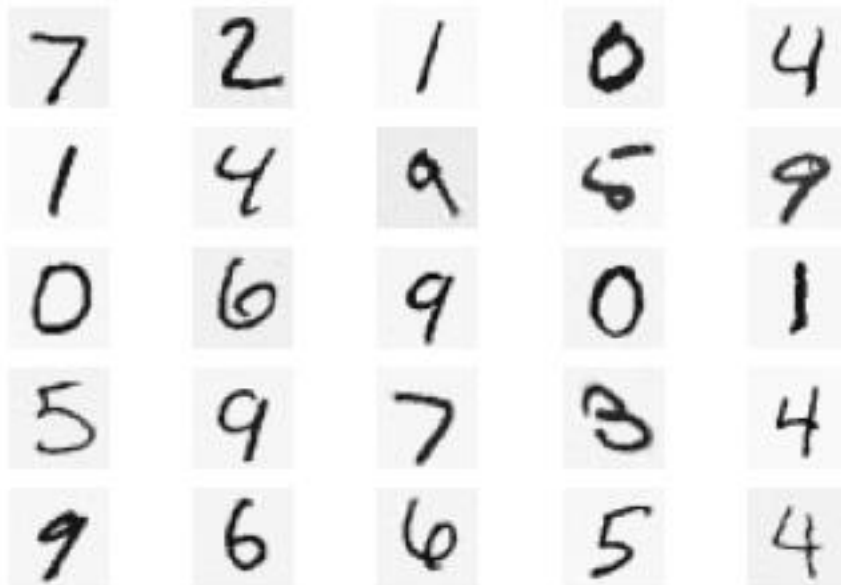
Question 1(a): MNIST test data projected onto 30 dimensions.



Question 1(b): MNIST test data projected onto 3 dimensions.



Question 1(c): MNIST test data projected onto 300 dimensions.



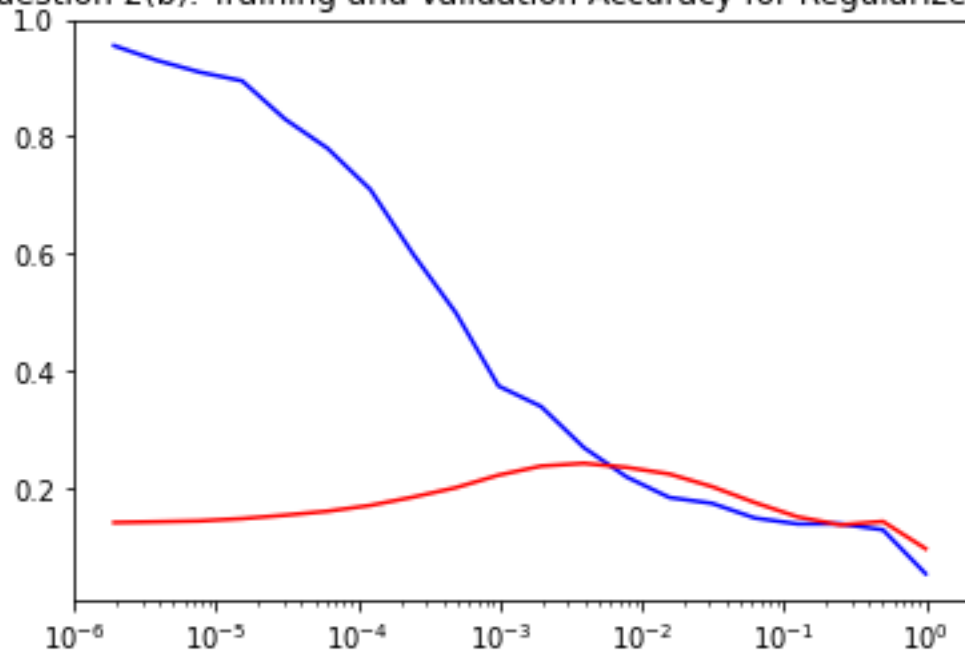
Question 1(f): MNIST data projected onto 100 dimensions (mine).



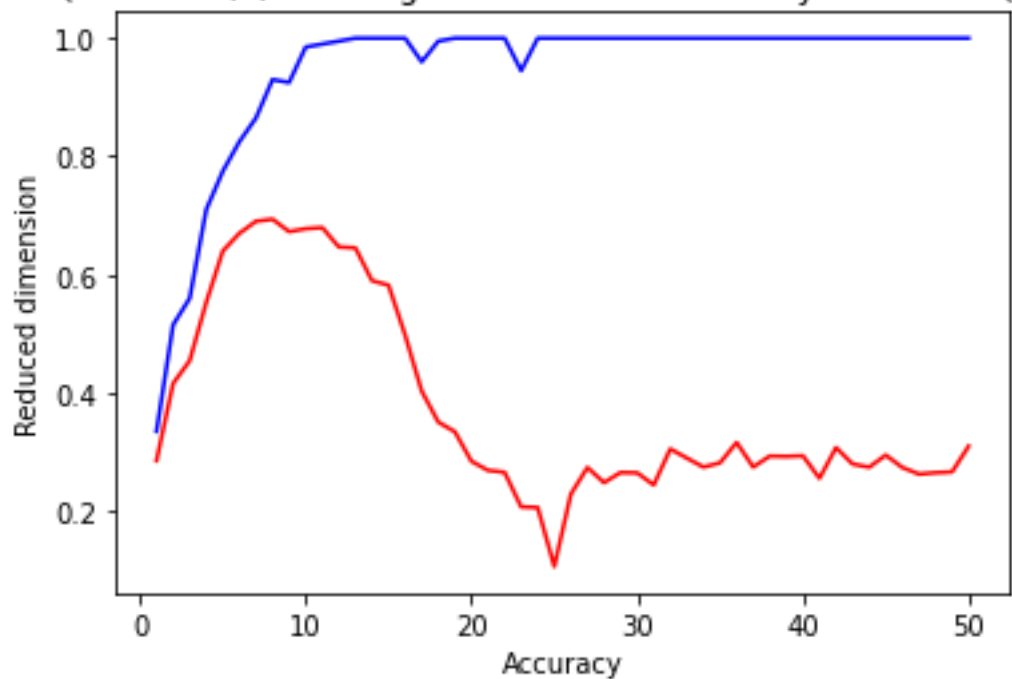
Question 1(f): MNIST data projected onto 100 dimensions (sklearn).

| | | | | |
|---|---|---|---|---|
| 2 | 2 | 0 | 0 | 4 |
| 1 | 7 | 9 | 8 | 8 |
| 0 | 2 | 5 | 6 | 0 |
| 7 | 7 | 9 | 2 | 7 |
| 7 | 0 | 7 | 1 | 1 |

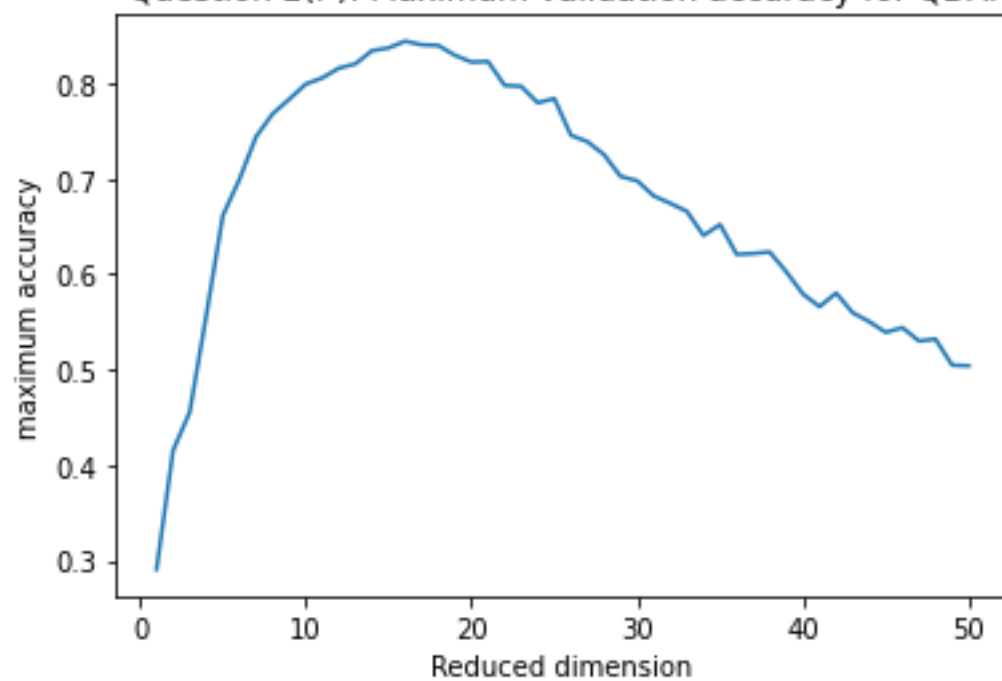
Question 2(b): Training and Validation Accuracy for Regularized QDA



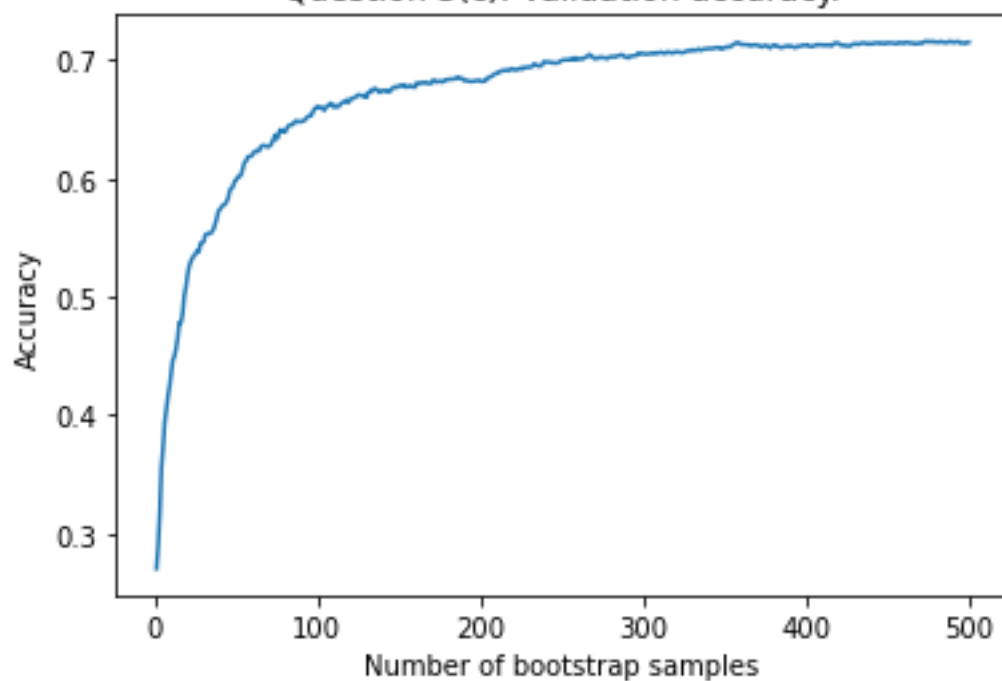
Question 2(d): Training and Validation Accuracy for PCA + QDA.



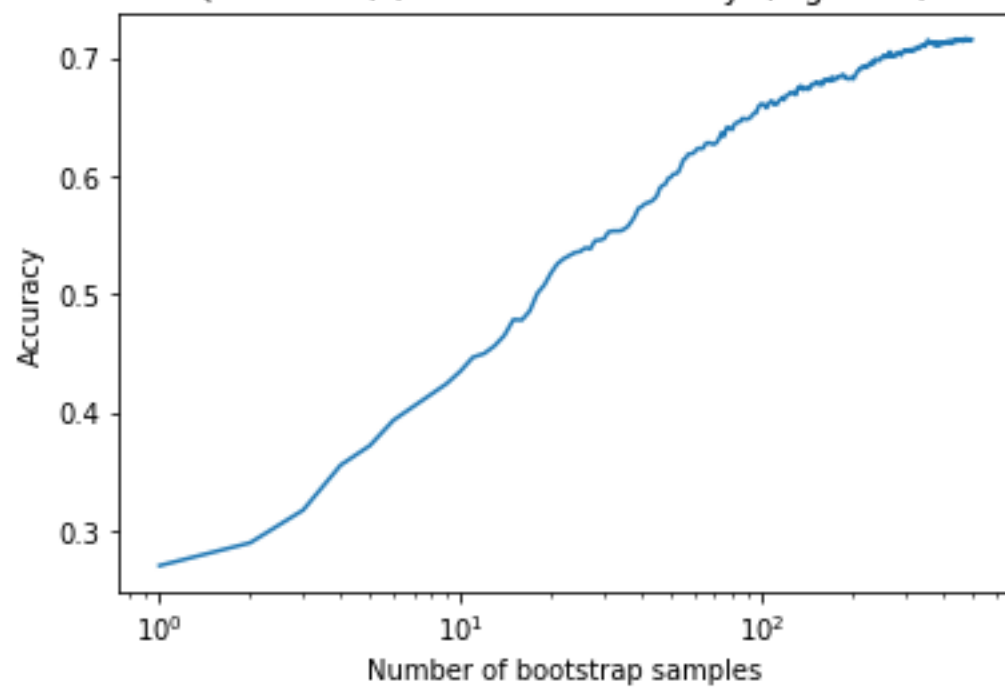
Question 2(f): Maximum validation accuracy for QDA.

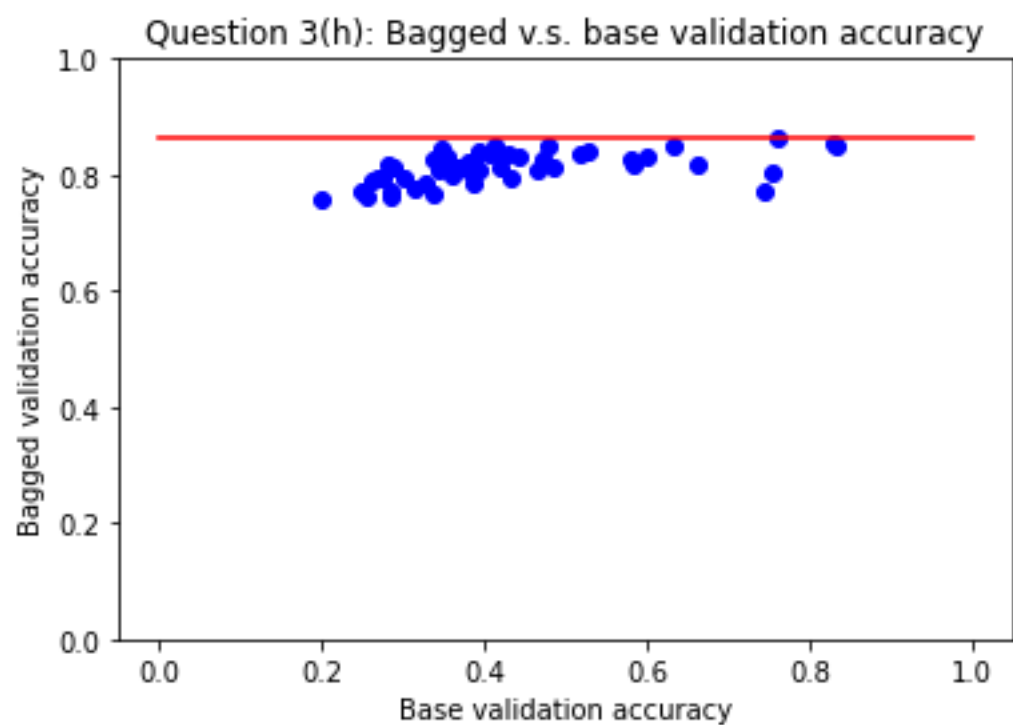
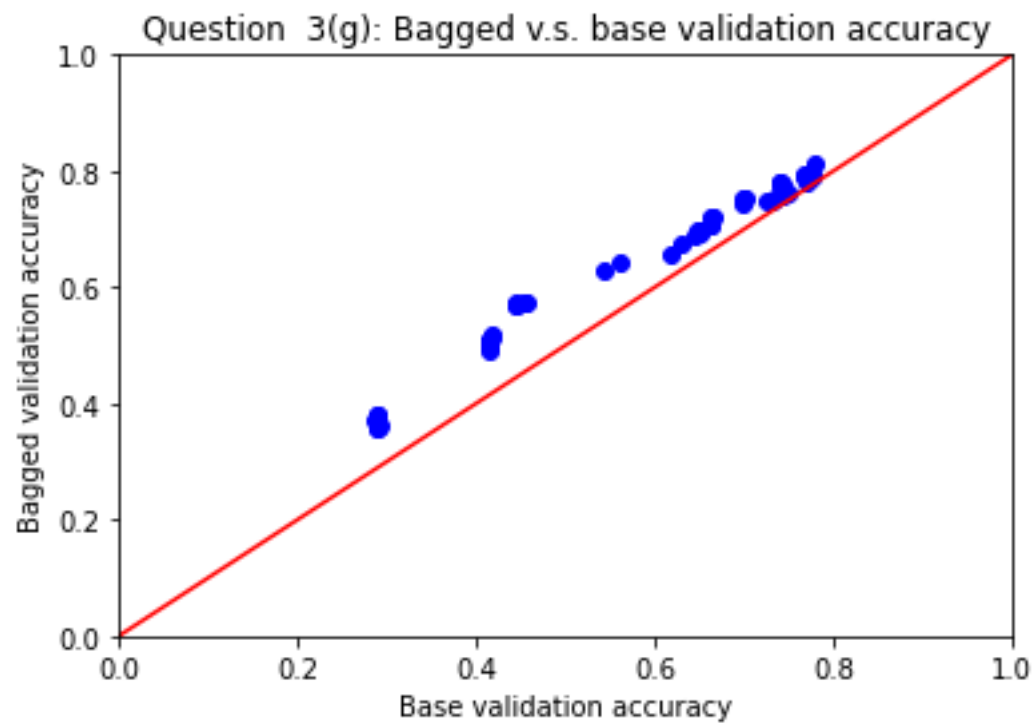


Question 3(c): Validation accuracy.

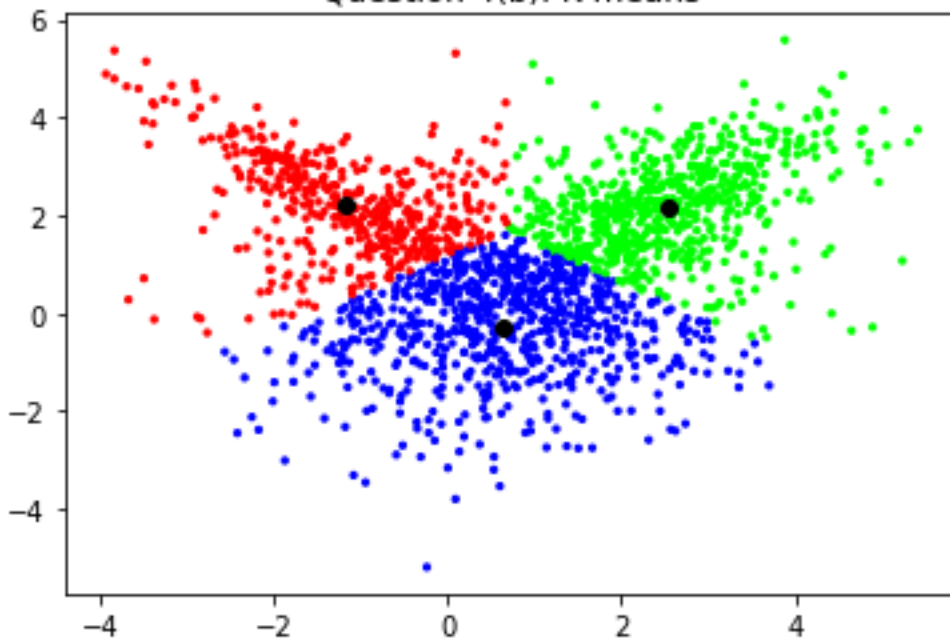


Question 3(c): Validation accuracy (log scale).

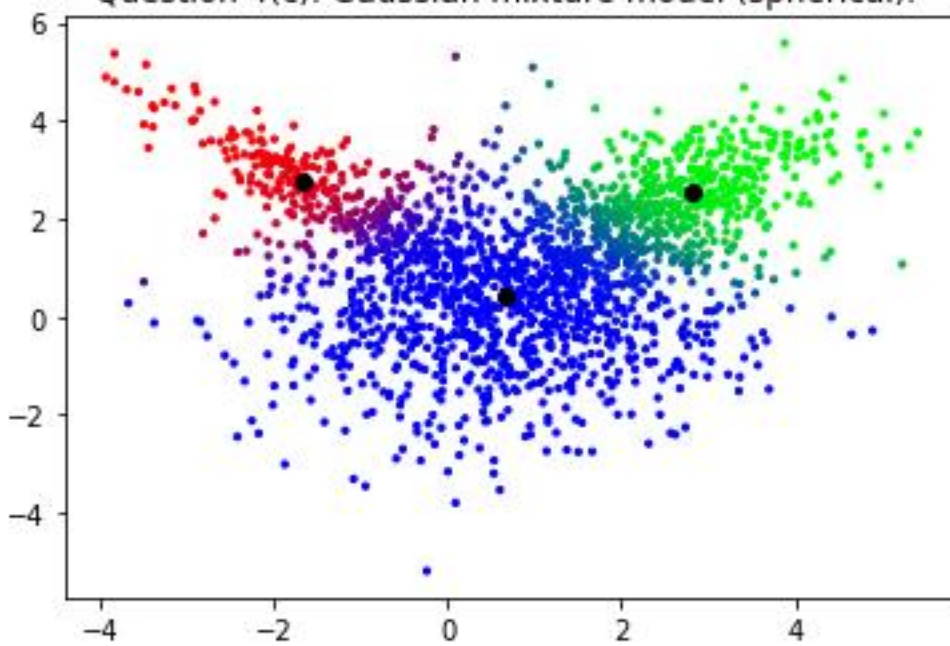




Question 4(b): K means



Question 4(c): Gaussian mixture model (spherical).



Question 4(d): Gaussian mixture model (full).

