HW 7 (due October 31)

Implement a weighted k-nearest neighbor algorithm for the available hand-written training data. Test the algorithm on the testing data. Provide accuracy results for the following 15 cases:

1) $k = 1, 2, \ldots, 7$; all the weights are equal 1.
2) $k = 1, 2, \ldots, 7$; all the weights are calculated according to the formula:

$$w_i = \frac{1}{d(x_q, x_i)^2 + \varepsilon}, \quad \varepsilon = 1.$$

3) k = all training points; all the weights are calculated according to the formula:

$$w_i = \frac{1}{d(x_q, x_i)^2 + \varepsilon}, \quad \varepsilon = 1.$$