**ISLR 2.4 Prob#7**

Table

Description automatically generated

* Euclidean Distance, d(p,q) =

Obs.1 Euclidean Distance = = 3

Obs.2 Euclidean Distance = = 2

Obs.3 Euclidean Distance = = 3.162

Obs.4 Euclidean Distance = = 2.236

Obs.5 Euclidean Distance = = 1.414

Obs.6 Euclidean Distance = = 1.732



* For k =1 , it will be green because from Observation#5, closest to k=1 is 1.414 which is green. So the prediction will be gree.



* For k=3, the prediction will be Red because when k=3 the closest Euclidean Distance is 3.162 which is Red.

Text

Description automatically generated with medium confidence

* For the case of highly non linear decision boundary, smaller k will be best value for covering the closest points as much as possible. If the decision boundary is linear then larger k will cover most of the decision points.