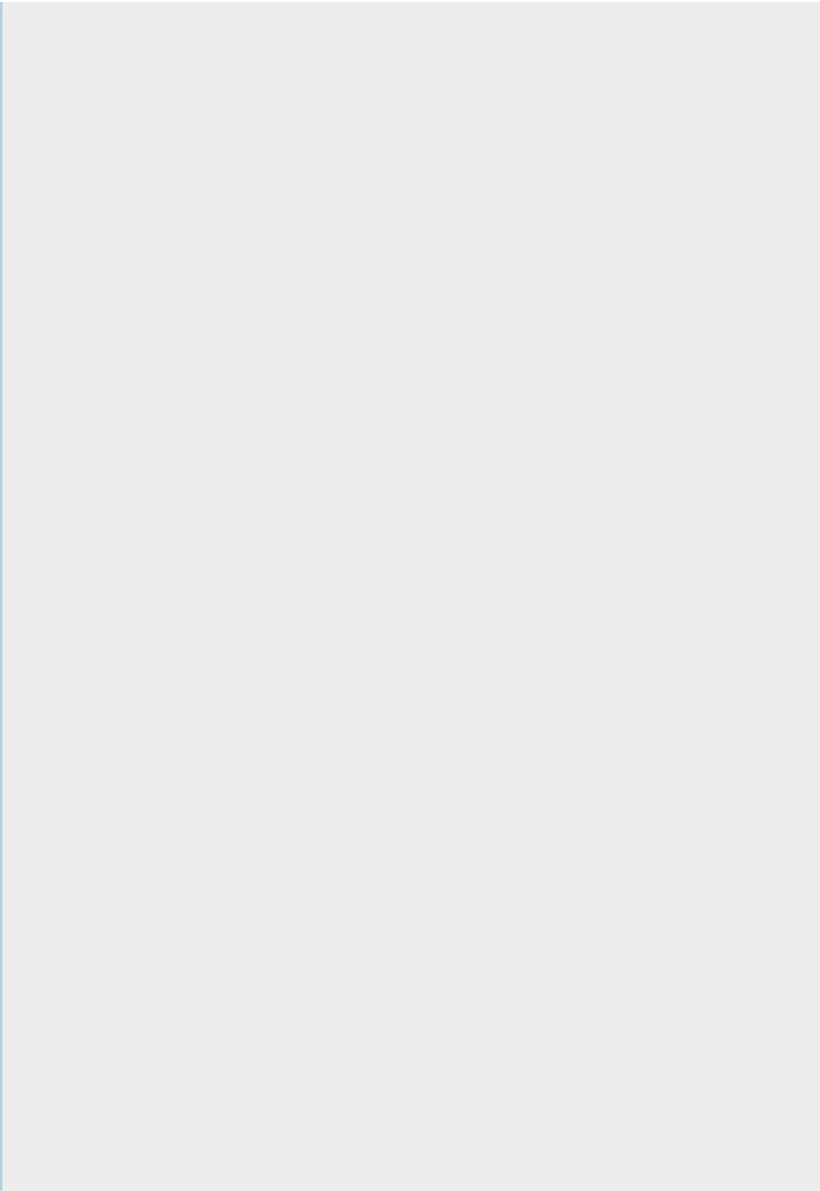
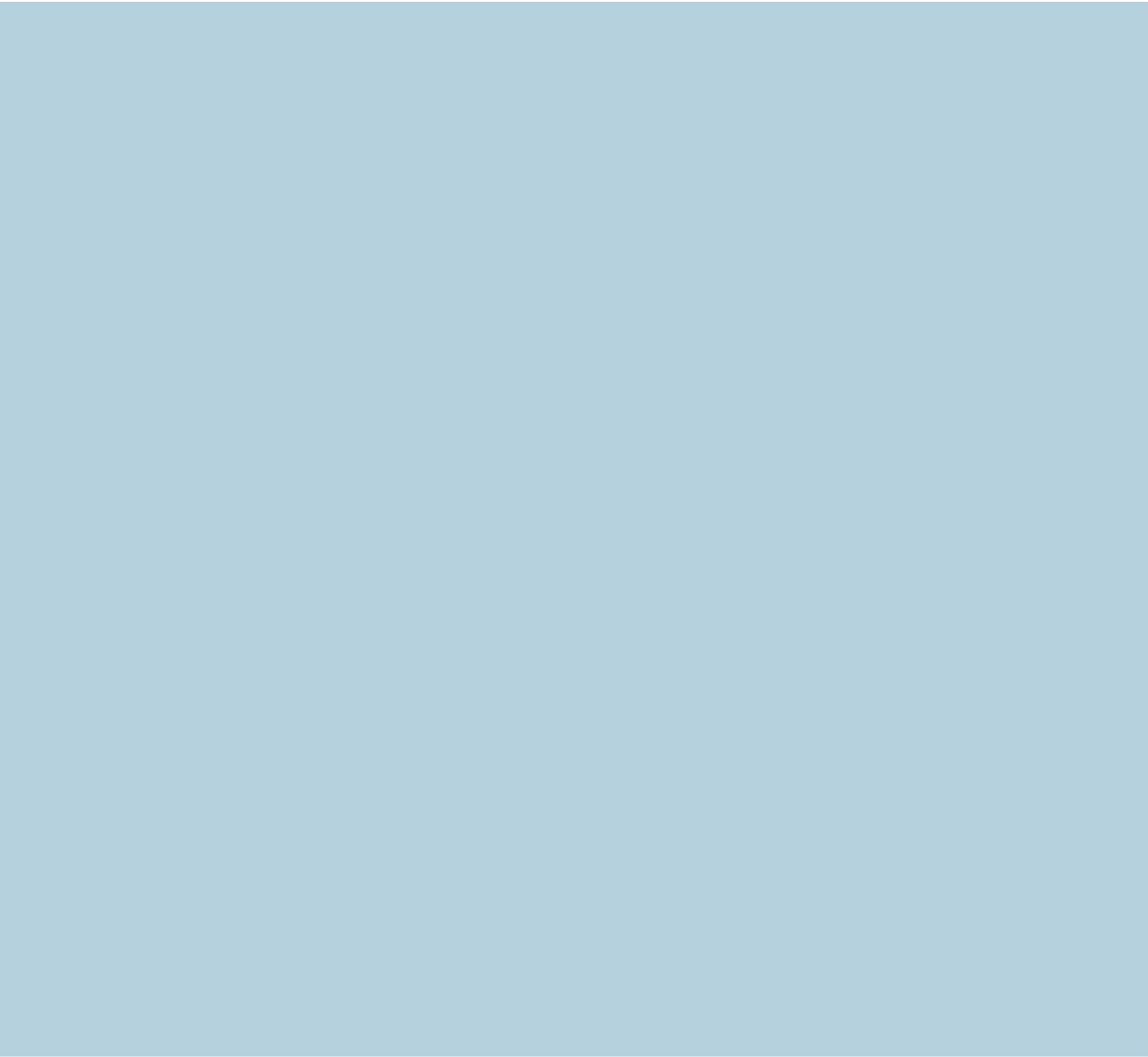
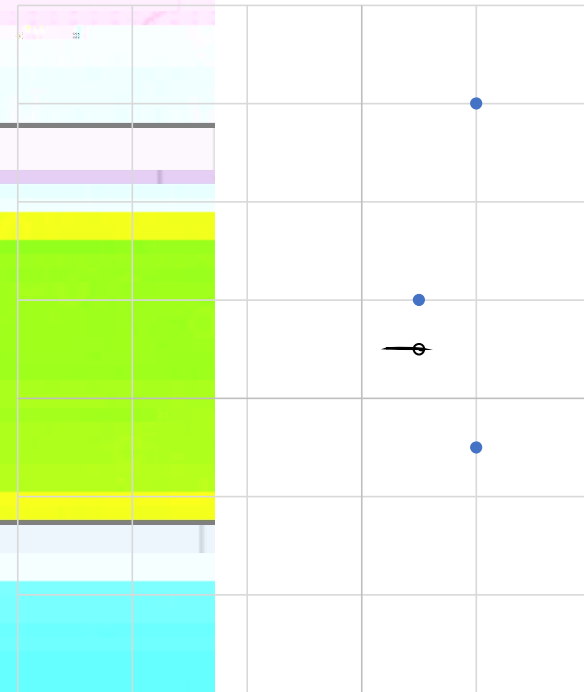


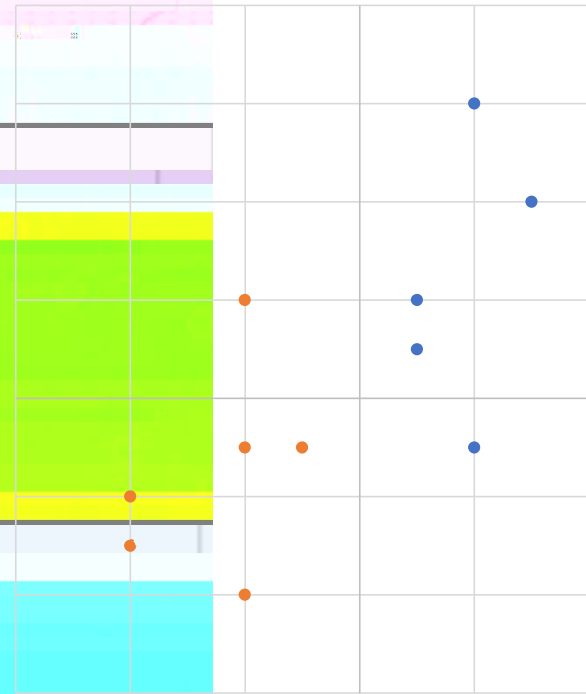
**KNearestNeighbor(K & )**



**In this example, 11 points are included in the dataset. The objective is to determine which category (0 or 2) belongs to. First, determine the value of k. In this case, k=3 is chosen.**



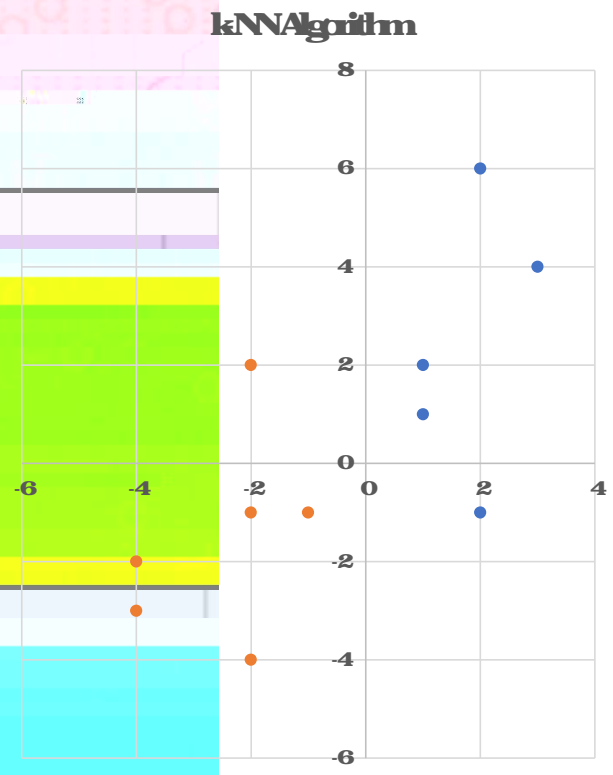
**Calculate the distance between the test point and each point in the training dataset.**







kNN				k=	3			Test point	0	2
x	y	Category	Distance <sup>2</sup>	Distance	Distance	Rank	NN?		A total count	B total count
1	2	A	1	1	1.000	1	Y		2	
2	-1	A	13	$\sqrt{13}$	3.606	5	N			
2	6	A	20	$\sqrt{20}$	4.472	8	N			
1	1	A	2	$\sqrt{2}$	1.414	2	Y		1	
3	4	A	13	$\sqrt{13}$	3					



Use the known labels to determine which category the test point belongs based on simple majority

## Conclusion

**The test point belongs to Category A**



# Applications

Data Compression

Finance and Economics

Health Sciences such as Genetics



# Further Readings

