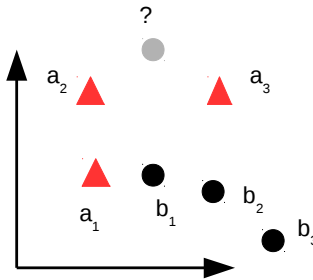# Nearest-neighbour methods

1. What is the difference between a parametric machine learning method and a non-parametric one? Is k-NN parametric?
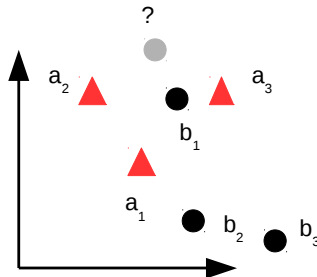
   Parametric methods have a pre-defined number of parameters, while non-parametric methods do not, and usually require memorising points from the dataset. K-NN is a non-parametric method.

2. Classify the data point with question mark with the 2-nearest neighbour method. Justify your answer.

   The two closest points are a_2 and a_3, and both are of class triangle, so the new point will also be classified as a triangle.

3. Classify the data point with question mark with the 4-nearest neighbour method. Justify your answer.

In this case the four closest points are a_1, a_2, a_3, b_1. The class that appears the most is triangle, so the new point will be classified as a triangle.