

## INTERVAL PARTITIONS

## Why

We partition a real interval into interval pieces.

## Definition

An *interval partition* is a finite partition of a closed real interval.

An interval partition is *regular* if all pieces except the largest are closed on the left and open on the right and the largest is closed.

Any regular interval partition with n-1 elements can be represented by n+1 real numbers: the endpoints of each interval. We call these the *cut points* of the interval partition.

## Notation

Let R denote the set of real numbers. Let [a, b] a closed interval in R with endpoints  $a, b \in R$ .

Consider a regular partition. of [a, b] with n-1 pieces. We can identify its cut points:

$$a = a_1 < a_2 < \dots a_{n-1} < a_n = b.$$

The pieces of the partition are:

$$[a_1, a_2), [a_2, a_3), \dots, [a_{n-2}, a_{n-1})[a_{n-1}, a_n].$$

