



### Why

Toward defining the length of a subset of real numbers, we start by defining the length of an interval.

### Definition

The *length* of an interval is the difference of its endpoints: the larger less the smaller.

### Notation

Let  $a, b$  be real numbers which satisfy the relation  $a < b$ . The length of  $(a, b)$ ,  $[a, b]$ ,  $[a, b)$  and  $(a, b]$  is, in each case,  $b - a$ .

For example, the length of the interval  $(0, 1)$  is 1.



