Handout: Order Symbols

\[ x \in [3, 5) \] means \( x : x \geq 3 \) and \( x < 5 \). Thus, \( x \) could equal 3, or 3.001, or 4.2, or 4.9999, but not 5.

\[ x \in \{3, 5\} \] means \( x \) is either 3 or 5, but not anything in between.

An open dot on a number line means that number is not included. A closed dot means that number is included.

An interval is a set of numbers in between two end point numbers. Thus, the interval \([3,5]\) includes 3, 3.0000001, 3.23, 4.01, 4.5, 4.999, 5, and all the other numbers in between.

We say that \([3, 5]\) is a Closed Interval, because it includes its end points, 3 and 5.

We say that \((3, 5)\) is an Open Interval, because it doesn’t included its end points, 3 and 5.