Toward a precise definition of limit
Assignment 1: Intervals and inequalities

For each of the following problems, the answer is an interval of numbers. You should express the answer for each problem in three different forms:

(i) In words: t is between a and b (ii) With inequalities: $a < t < b$

(iii) With interval notation: t in (a, b) (iv) Plotted on a number line

1. Find all values of t such that $|t - 5| < 1$.

2. Find all values of t such that $|t - 5| < 0.5$.

3. Find all values of t such that $|t - 5| < 0.2$.

4. Find all values of t such that $|t - 5| < p$.

5. Find all values of t such that $|t - q| < p$.

Note: The symbols α and β are the lower case Greek letters *alpha* and *beta*.