

Year 5. Session 115 (2009-2010 school year).
Set Theory.

What is a function?

History of the modern understanding of functions.

Dirichlet function:

$$F(x) = \begin{cases} 0 & \text{if } x \text{ irrational} \\ 1 & \text{if } x \text{ rational} \end{cases}$$

Example of a continuous function that has infinitely many max and min points on a finite segment:

The max and mins of this point are concentrated around single point.

Example of a continuous function that has infinitely many max and min points on a finite segment:

Cantor set – has cardinality of continuum.

Every point of the Cantor set has infinitely many maxs and mins around it.