

SCALING PROPERTIES OF FUNCTIONS RELATED TO FAREY SEQUENCES

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ABSTRACT: The Farey sequence of order n consists of all reduced fractions a/b between 0 and 1 with positive denominator b less or equal to n . In my talk I present representation formulas for a sequence of functions used in the Franel-Landau theorem to determine the number of Farey-fractions in prescribed intervals as well as for a related sequence functions. The representation formulas deal with limit functions which describe a scaling property of the Farey sequence of order n for $n \rightarrow \infty$ in the vicinity of any fixed fraction a/b and which is independent of a/b . The application of the representation formulas and the prime number theorem also gives pointwise convergence results for these sequence of functions.