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Riemenschneider, Oswald (D-HAMB-SM)
Simple analytic proofs of some versions of the abstract prime number theorem.
(English summary)
Singularities—Niigata–Toyama 2007, 249–283, *Adv. Stud. Pure Math.,* 56, *Math. Soc.
Japan, Tokyo,* 2009.

The author draws attention to a fifty-year-old one-page sketch by Ernst Witt of a proof
of the prime number theorem (PNT).

He gives a short survey of the Tauberian theorems of prime number theory and proofs
of the so-called 'abstract PNT'. He also describes the (in his words "quite recent")
approach in the 1982 modified version by J. Korevaar of the 1980 D. J. Newman proof
of the classical PNT.

His intention is to place (without regard to priority) the ideas in the Witt note in
the context of the above developments and to show that the ideas in that note can be
combined with the Newman-Korevaar approach to yield a proof of the abstract PNT
"that is close to Beurling's original one". The author will "try to convince the reader
that one can combine the two... to eliminate number theory completely by standard
(complex and real) analysis".

The reviewer has long believed in the importance of having many different approaches
to proving the PNT. After all, someday, someone may find the 'right' proof and receive
the rewards that will follow on that triumph. Still, while trying to be open-minded, it is
difficult to envision that the right proof will be one that succeeds to "eliminate number
theory completely".

{For the collection containing this paper see MR2640471}

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