

## An algorithm for counting smooth integers

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### Abstract

© 2016, Pleiades Publishing, Ltd. An integer number  $n > 0$  is called  $y$ -smooth for  $y > 0$  if any prime factor  $p$  of  $n$  satisfies  $p \leq y$ . Let  $\psi(x, y)$  be the number of all  $y$ -smooth integers less or equal to  $x$ . In this paper we elaborate a new algorithm for approximate calculation of  $\psi(x, y)$  at large  $x$  and relatively small  $y < \log x$ .

<http://dx.doi.org/10.1134/S1995080216020062>

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### Keywords

calculation of smooths, Dickman–de Bruijn function, distribution of smooths, Smooth integers