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On the core of an integer

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The core, or squarefree kernel, of an integer is defined as its largest squarefree divisor. The underlying arithmetic function is linked to many problems and conjectures in number theory, including the *abc* conjecture. We present new, uniform asymptotic formulae, obtained recently in collaboration with O. Robert, for the number of integers not exceeding x with core at most y. A number of applications to questions studied by Erdös, de Bruijn and others will also be described. Finally, an account on how these bounds are employed, in a *joint work with O. Robert and C.L. Stewart*, to derive a refined form of the abc conjecture will be provided.

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