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Constructing a 10 billion factor Carmichael number

A Carmichael number is a pseudoprime n that passes the base a Fermat primality test for all a coprime to n . With programming help from Steven Hayman, I have constructed a Carmichael number with 10 billion prime factors and almost 300 billion decimal digits. This was made possible by a new algorithm for dense instances of the subset-product problem, an algorithm inspired by the Kuperberg Sieve from the theory of quantum algorithms.