Heath-Brown, D. R.

Fermat's Last Theorem for "almost all" exponents. (English) Zbl 0546.10012

Bull. Lond. Math. Soc. 17, 15-16 (1985).

Let N(x) denote the number of exponents $3\leq n \leq x$ for which $u^n + v^n = w^n$ has a non-trivial solution in integers. Fermat's Last Theorem is the conjecture that $N(x) = 0$. The present paper shows that $N(x) = o(x)$ as $x \to \infty$. The proof is extremely simple. It uses *G. Faltings*' result that there are finitely many primitive solutions (u,v,w) for each exponent $n \geq 3$ [Invent. Math. 73, 349-366 (1983; Zbl 0588.14026)], together with the sieve of Eratosthenes.

MSC:

11D41	Higher degree equations; Fermat's equation
11N35	Sieves

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Faltings theorem; Mordell conjecture; Fermat's Last Theorem; sieve of Eratosthenes

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