

[Ageev, A. A.](#)

Sierpinski's theorem is deducible from Euler and Dirichlet. (English) Zbl 0815.11044
Am. Math. Mon. 101, No. 7, 659-660 (1994).

In 1964 *W. Sierpiński* [*Bull. Soc. R. Sci. Liège* 33, 259-260 (1964; [Zbl 0127.268](#))] proved that for any M there exists a positive integer t such that the sequence $n^2 + t$, $n = 1, 2, \dots$ contains at least M primes. In the present note the author shows that an even slightly stronger result can be easily derived from Dirichlet's theorem that every arithmetic progression with common difference relatively prime to the initial term contains infinitely many primes in conjunction with Euler's result that every prime of the form $4k + 1$ is representable as a sum of two squares.

Reviewer: [J.Hinz \(Marburg\)](#)

MSC:

[11N32](#) Primes represented by polynomials; other multiplicative structures of polynomial values
[11N13](#) Primes in congruence classes
[11A41](#) Primes

Keywords:

primes represented by polynomials; Dirichlet's theorem; arithmetic progression; Euler's result; sum of two squares

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