Russell A. Gordon and Sara L. Graham
Comments on Proofs That There are No Four Squares in Arithmetic
Progression,
Fibonacci Quart. 53 (2015), no. 1, 68–73.

Abstract

It is known that there are no four distinct squares that form an arithmetic progression. We present a slightly new proof of a more general result, summarize the various proofs that there are no four squares in arithmetic progression, and carefully explain the error in an incorrect proof that persists in the literature.