

The Problem of the Extension of a Parametric Family of Diophantine Triples

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It is proven that if $k \geq 2$ is an integer and d is a positive integer such that the product of any two distinct elements of the set

$$\{k - 1, k + 1, 4k, d\}$$

increased by 1 is a perfect square, then d has to be $16k^3 - 4k$. This is a generalization of the well known result of Davenport and Baker for $k = 2$.