Abstract

Let $k \geq 1$ be an integer and let P_k and Q_k be the kth Pell number and kth Pell-Lucas number, respectively. In this paper, we prove that if d is a positive integer such that

$$\{P_{2k}, P_{2k+2}, 2P_{2k+2}, d\}$$

is a Diophantine quadruple, then $d = P_{2k+1}Q_{2k+1}Q_{2k+2}$. We deduce that the pair $\{P_{2k}, 2P_{2k+2}\}$ cannot be extended to an irregular Diophantine quadruple.