Soldo, Ivan

On the extensibility of D(-1)-triples \{1, b, c\} in the ring \(\mathbb{Z}[\sqrt{-t}]\), \(t > 0\)

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Abstract. Let \(b = 2, 5, 10\) or \(17\) and \(t > 0\). We study the existence of D(-1)-quadruples of the form \(\{; ; 1, b, c, d\}; \) in the ring \(\mathbb{Z}[\sqrt{-t}]\). We prove that if \(\{; ; 1, b, c\}; \) is a D(-1)-triple in \(\mathbb{Z}[\sqrt{-t}]\), then \(c\) is an integer. As a consequence of this result, we show that for \(t \notin \{; ; 1, 4, 9, 16\}; \) there does not exist a subset of \(\mathbb{Z}[\sqrt{-t}]\) of the form \(\{; ; 1, b, c, d\}; \) with the property that the product of any two of its distinct elements diminished by 1 is a square of an element in \(\mathbb{Z}[\sqrt{-t}]\).