

## On the representation of an imaginary quadratic integer in two different bases

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**Abstract.** Let  $(\alpha, \mathcal{N}_\alpha)$  and  $(\beta, \mathcal{N}_\beta)$  be two canonical number systems for an imaginary quadratic number field  $K$  such that  $\alpha$  and  $\beta$  are multiplicatively independent. We provide an effective lower bound for the sum of the number of non-zero digits in the  $\alpha$ -adic and  $\beta$ -adic expansions of an algebraic integer  $\gamma \in \mathcal{O}_K$  which is an increasing function of  $|\gamma|$ . This is an analogue of an earlier result due to Stewart on integer representations.

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