

1135-VL-2737

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In 1949, T. Motzkin provided a recursive definition for the “minimal” Euclidean function in a given Euclidean domain. Motzkin was able to define a closed form for this function over \mathbb{Z} ; however, finding a closed form over other domains is substantially more difficult. In the case of $\mathbb{Z}[i]$, bounds for which the closed form must satisfy have been established, but no explicit formula yet exists. In this talk, we present our results which refine Motzkin’s original recursive definition of the function over $\mathbb{Z}[i]$, as well as describe how these results can be applied to determine a closed form for the function. (Received September 26, 2017)