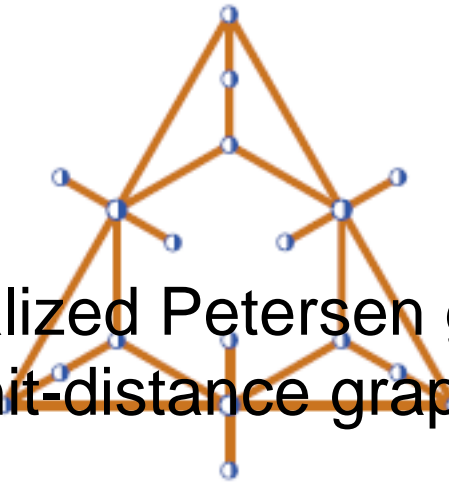


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All generalized Petersen graphs are unit-distance graphs



Content :

In 1950 the class of generalized Petersen graphs was introduced by Coxeter and around 1970 popularized by Frucht, Graver and Watkins. The family of IS -graphs mentioned in 1988 by Bouwer {em et al.} represents a slight further albeit important generalization of the renowned Petersen graph. We show that each IS -graph $SI(n,j,k)$ admits a unit-distance representation in the Euclidean plane.

This implies that each generalized Petersen graph admits a unit-distance representation in the Euclidean plane. In particular, we show that every IS -graph $SI(n,j,k)$ has an isomorphic IS -graph that admits a unit-distance representation in the Euclidean plane with a n -fold rotational symmetry, with the exception of the families $SI(n,j,j)$ and $SI(12m,m,5m)$, $m \geq 1$. We also provide unit-distance representations for these graphs.

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