

# Computer assisted investigations connected to $m$ -convexity of sets

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## Abstract

According to a definition of Gheorghe Toader [1], if  $m \in [0, 1]$  is a fixed real number, a set  $H \subseteq \mathbb{R}^2$  is called  $m$ -convex if  $tx + m(1-t)y \in H$  for all  $x, y \in H$  and  $t \in [0, 1]$ . The  $m$ -convex hull of a nonempty set  $S \subseteq \mathbb{R}^2$  is defined as the intersection of all  $m$ -convex subsets of  $\mathbb{R}^2$  containing  $S$ . Connected to these concepts, we present a computer program developed in the computer algebra system Maple, which determines the  $m$ -convex hulls of sets consisting of finitely many points in the plane. (Joint work with Roy Quintero and Lan Nhi To.)

## References

- [1] TOADER G., Some generalizations of the convexity, *Proceedings of the colloquium on approximation and optimization, Univ. Cluj-Napoca, Cluj-Napoca*, 329–338, 1985.

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