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Convex body

In mathematics, a **convex body** in *n*-dimensional Euclidean space \mathbb{R}^n is a compact convex set with non-empty interior.

A convex body *K* is called **symmetric** if it is centrally symmetric with respect to the origin; that is to say, a point *x* lies in *K* if and only if its antipode, $-x$ also lies in *K*. Symmetric convex bodies are in a one-to-one correspondence with the unit balls of norms on \mathbb{R}^n .

Important examples of convex bodies are the Euclidean ball, the hypercube and the cross-polytope.

See also

- List of convexity topics – Wikipedia list article
- John ellipsoid

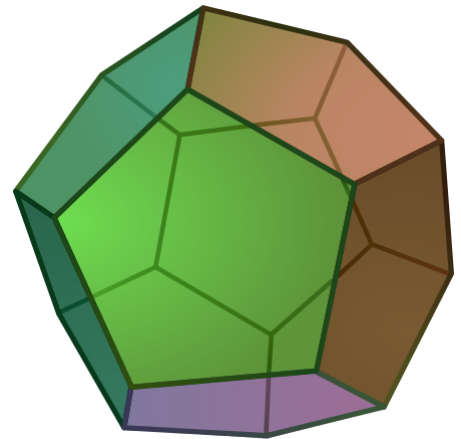
References

- Gardner, Richard J. (2002). "The Brunn-Minkowski inequality" (<https://doi.org/10.1090%2FS0273-0979-02-00941-2>). *Bull. Amer. Math. Soc. (N.S.)*. **39** (3): 355–405 (electronic). doi:10.1090/S0273-0979-02-00941-2 (<https://doi.org/10.1090%2FS0273-0979-02-00941-2>).

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A dodecahedron is a convex body.