Platonic configurations of points and lines*

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Abstract

We present some methods for constructing connected spatial geometric configurations (p_q, n_k) of points and lines, preserved by the same isometries of Euclidean space E^3 as the predetermined Platonic solid. In this paper, we are mainly interested in configurations (n_3), (n_4), and (n_5), but also in unbalanced configurations (p_3, n_4), (p_3, n_5), and (p_4, n_5).

Keywords: Configuration of points and lines, symmetry group, Platonic solid, centrally symmetric solid, projection from a point.

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Platonske konfiguracije točk in premic[*]

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Povzetek

Predstavimo nekaj metod za konstruiranje povezanih prostorskih geometrijskih konfiguracij (p_q, n_k) točk in premic, ki jih ohranjajo iste izometrije evklidskega prostora E^3, ki ohranjajo tudi izbrano platonsko telo. V tem članku nas zanimajo predvsem konfiguracije (n_3), (n_4), in (n_5), pa tudi neuravnotežene konfiguracije (p_3, n_4), (p_3, n_5), in (p_4, n_5).

Ključne besede: Konfiguracija točk in premic, simetrijska grupa, platonsko telo, centralno simetrično telo, projekcija iz točke.

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