

Sortov convergence

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This week's homework from the Sortov Institute is only mildly eccentric.

Let $(x_n)_{n \in \mathbb{N}}$ be a sequence of elements of \mathbb{R}^2 such that the convex hull of the trio

$\{x_n, x_{n+1}, x_{n+2}\}$

contains the point x_{n+3} , for every n . Show that the subsequences

(x_{3n})

(x_{3n+1})

(x_{3n+2})

are convergent.

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