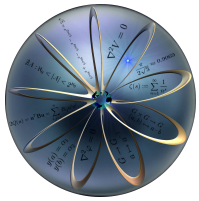

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Dirac sequence

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A *Dirac sequence* is a sequence (δ_k) of functions δ_k, which satisfies the following conditions:

1. $\delta_k \geq 0$ for all k.

2. $\int_{-\infty}^{\infty} \delta_k(t)dt = 1$ for all k.

3. For every $r > 0$ and $\varepsilon > 0$ there is an $N \in \mathbb{N}$, such that for all $k > N$ we have
$$\int_{\mathbb{R}\setminus[-r,r]} \delta_k(t)dt < \varepsilon.$$

These functions "converge" to the Dirac delta function.