

This note, that [was found here](#), as a part of [a collection](#) is written (completely with human hands) by [Rupadarshi Ray](#), was created on May 25, 2026 12:34:14 AM, was last modified on May 25, 2026 12:41:36 AM, and was exported on September 7, 2026 3:09:49 PM.

Metric density of subsets of $\mathbb{R}^n$

Let $S \subseteq \mathbb{R}^n$ be a subset. Then

$$d_S(x) := \sup \{ \epsilon > 0 | \forall r \in [0, \epsilon], B_r(x) \subseteq S \} \subseteq [0, \infty]$$

is the **density** of $x \in \mathbb{R}^n$.

- For $x \in S$
 - $d_S(x) = 0 \iff$ for each $\epsilon > 0$, $B_\epsilon(x)$ is not a subset of $S \iff x$ is an isolated point

Current note has 0 direct children and 0 total descendants.

- [stem](#)
 - [subobjects of and functions on \$\mathbb{R}^n, S^n, \mathbb{C}^n\$ and its quotients \$\Gamma \backslash \mathbb{R}^n, \Gamma \backslash \mathbb{C}^n\$](#)
 - [Metric density of subsets of \$\mathbb{R}^n\$](#)

And it has 39 siblings.

- [stem](#)
 - [subobjects of and functions on \$\mathbb{R}^n, S^n, \mathbb{C}^n\$ and its quotients \$\Gamma \backslash \mathbb{R}^n, \Gamma \backslash \mathbb{C}^n\$](#)
 - [Holomorphic functions on spaces over \$\mathbb{C}\$ of dimension 1](#)
 - [Open subsets of \$\mathbb{R}^n\$ with \$\mathcal{C}^2\$ boundary](#)
 - [Complex ODEs in \$\mathbb{C}\$](#)
 - [Circle packing on \$\mathbb{R}^2\$](#)
 - [Circle packing converges to the Riemann biholomorphism](#)
 - [Bounded connected open subsets of \$\mathbb{C}^n\$](#)
 - [Connected circular open subsets of \$\mathbb{C}^n\$](#)
 - [Continuous functions on \$\mathbb{R}^d\$](#)
 - [Dyadic cubes](#)
 - [Curves](#)
 - [Differentiable functions](#)
 - [Differential forms on \$\mathbb{R}^n\$](#)
 - [Fourier-Wigner transform](#)
 - [Harmonic functions composed with conformal maps](#)
 - [Hilbert transform](#)
 - [Fourier-Cauchy-Poisson correspondence of holomorphic and harmonic functions on the unit disk and their boundary values](#)
 - [Holomorphic subsets of \$\mathbb{C}^n\$](#)
 - [Regular hypersurfaces in \$\mathbb{R}^{2n}\$](#)
 - [Orientable hypersurfaces in \$\mathbb{R}^n\$](#)
 - [Laplace operator on \$\mathbb{R}^n\$](#)
 - [\$l^\infty\(\mathbb{R}\)\$](#)
 - [Lebesgue measurable subsets of and functions on \$\mathbb{R}^n, T^n, S^n\$](#)
 - [Lebesgue measure of boundary of open sets in \$\mathbb{R}^n\$](#)
 - [Local \$\mathbb{R}\$ -algebras](#)
 - [\$l^p\(\mathbb{R}\)\$](#)
 - [Metric density of subsets of \$\mathbb{R}^n\$](#)
 - [Monotone functions on \$\mathbb{R}\$](#)
 - [Cauchy integral of periodic functions](#)
 - [Polygons with integer vertices](#)
 - [Open smooth maps \$U \subseteq \mathbb{R}^2 \rightarrow \mathbb{C}\$](#)
 - [Discrete subgroups of \$\mathbb{R}^n\$](#)
 - [Discrete cocompact subgroups of \$\mathbb{R}^n\$, flat tori](#)
 - [Ramified germs of smooth and holomorphic functions](#)
 - [Open subsets of \$\mathbb{R}^n\$](#)
 - [Open subsets of \$\mathbb{R}^n\$ equipped with the flat metric](#)
 - [Closed subsets of \$\mathbb{R}^n\$ equipped with smooth functions](#)
 - [Quasi-analytic smooth functions on \$\mathbb{R}\$](#)
 - [Star-shaped subsets of \$\mathbb{R}^n\$](#)
 - [ODEs in \$\mathbb{R}^n \leftrightarrow\$ Vector fields in \$\mathbb{R}^n\$](#)