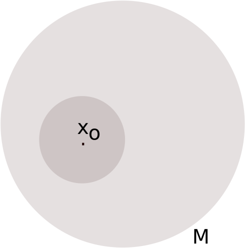
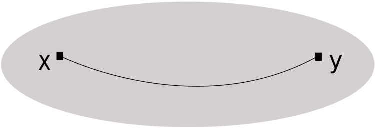
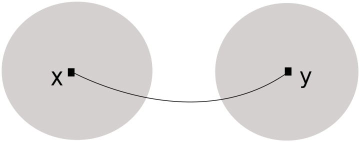


A set M of $\mathbb{R}^d$ $(d = 1, 2, 3)$ is called open set if for any point $x_0 \in M$ there exists a ball[1] $B(x_0, r)$ belonging to M $(B(x_0, r) \subset M)$. A set M of $\mathbb{R}^d$ is called closed set if for any sequence $(x_n)_{n \in \mathbb{N}}$, $x_n \in M$, converging to some point $\bar{x}$, the limit point $\bar{x}$ belongs to M, i.e. $(x_n \to \bar{x}$ and $x_n \in M) \Rightarrow \bar{x} \in M$. A set M of $\mathbb{R}^d$ is called connected set if any two points x, y of M can be connected by a continuous curve C_{xy} belonging to M $(C_{xy} \subset M)$.

[1] $B(x_0, r) = \{x \in \mathbb{R}^n \mid \ ||x - x_0|| < r\}$, x_0 is the center, $r > 0$ is the radius.

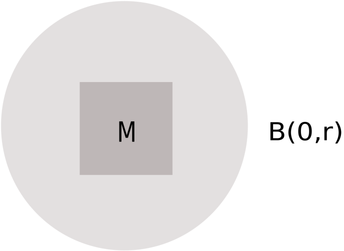


connected

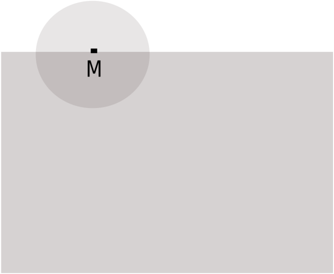


not connected

A set M of $\mathbb{R}^d$ is called bounded set if there exists a ball $B(0, r)$ containing the whole set M ($M \subset B(0, r)$).



A set ∂M of $\mathbb{R}^d$ is called the boundary of a set $M \subset \mathbb{R}^d$ if any ball with the center at the points of ∂M contains at least one point belonging to M and at least one point out of M.



boundary

A set $\bar{M} = M \cup \partial M$ is called the closure of M. An open connected set in $\mathbb{R}^d$ is called domain. In the present section we consider a bounded domain G.