Definition 14.4. *[16X]* *Let* $C \subseteq \mathbb{R}^n$ *be a set; it is called* convex *if*

$$\forall t \in [0,1], \ \forall x, y \in C, \ (tx + (1-t)y) \in C$$

that is, if the segment connecting each $x, y \in C$ *is all inclusive in* C.