

高雄大學應用數學系每月挑戰解答

2013 年一月

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A set $D \subseteq \mathbf{R}^n$ is disconnected if and only if $D = E \cup F$, where E, F are nonempty and $E \cap \bar{F} = \emptyset$, $\bar{E} \cap F = \emptyset$ (\bar{B} is denoted the closure of set B).

<pf.> Since D is disconnected if and only if D is union of two disjoint open sets in D , we have D is disconnected if and only if $D = E \cup F$, where E, F are nonempty and $E \cap \bar{F} = \emptyset$, $\bar{E} \cap F = \emptyset$.