

高微第五週作業

Rudin : p.43 # 8, p.44 #10, 12,16

Extra problem :

1. Let $p \in R^n$ (with Euclidean metric), $r > 0$. Show that

$$\overline{N_r(p)} = \{q \in R^n \mid d(p, q) \leq r\}.$$

Give an example of a metric space for which the corresponding statement is not true. (Hint : Rudin p44. #10)

2. Let A, B be compact sets, prove that $A \cup B$ is compact.