

#Jenny



Finally I get this ebook, thanks for all these I can get now!

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Cool! I'am really happy

#Markus Jensen



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My friends are so mad that they do not know how I have all the high quality ebook which they do not!

#Diego Butler



so many fake sites. this is the first one which worked! Many thanks

Munkres 2e, p101, fallacious pp.  $\overline{\bigcup \bar{A}_\alpha} \subset \bigcup \bar{A}_\alpha$  12/06

17.7. Where is the mistake?

Supp.  $x \in \overline{\bigcup A_\alpha}$   
Let  $U \subseteq X$  be any open set with  $x \in U$ .  
Then  $U \cap \bigcup A_\alpha \neq \emptyset$ .  
i.e. there exists  $\alpha_0$  s.t.  $U \cap A_{\alpha_0} \neq \emptyset$ .  
Therefore  $x \in \bar{A}_{\alpha_0}$  and  $x \in \bigcup \bar{A}_\alpha$ .

High-lighting the quantifiers.

Suppose  $x \in \overline{\bigcup A_\alpha}$ .  
 $\Leftrightarrow \forall U \subseteq X$  open,  $x \in U \Rightarrow U \cap \bigcup A_\alpha \neq \emptyset$ .  
 $\Leftrightarrow \forall U \subseteq X$  open,  $x \in U \Rightarrow \exists \alpha_0$  s.t.  $U \cap A_{\alpha_0} \neq \emptyset$ .  
 $\Leftrightarrow \exists \alpha_0$  s.t.  $\forall U \subseteq X$  open,  $x \in U \Rightarrow U \cap A_{\alpha_0} \neq \emptyset$ .  
 $\Leftrightarrow \exists \alpha_0$  s.t.  $x \in \bar{A}_{\alpha_0}$ .  
 $\Leftrightarrow x \in \bigcup \bar{A}_\alpha$ .

Counterex:  $X = \mathbb{R}$ ,  $\Lambda = \mathbb{Z}^+$ ,  $A_n = \{\frac{1}{n}\}$ ,  $x = 0$   
Then  $x = 0 \in \overline{\{\frac{1}{n} : n \in \mathbb{Z}^+\}} = \bigcup \overline{\{\frac{1}{n}\}}$   
but for all  $n \in \mathbb{Z}^+$ ,  $x = 0 \notin \overline{\{\frac{1}{n}\}} = \{\frac{1}{n}\}$ .

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