July 16th

§4.1

Integrability of a bdd func in one variable on a compact set.

$$f(x)=\begin{cases}0 & \mathbb{Q}\cap[0,1]\\ 1 & \mathbb{Q}^c\cap[0,1]\end{cases}$$

Claim it not integrable

Take any partition P on $[0,1]$

$\overline{S}=1\cdot(1-0)=1$

$\underline{S}=0\cdot(1-0)=0$

so, $\overline{S}-\underline{S}=0$, no ε. $\Rightarrow$ not integrable. (Q1 on P157)

4.9 Theorem

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