

HW1-2020 (4월 6일, 월요일)

1. Ex 1.1.4

2. Ex 1.1.5

3. Ex 1.2.1

4. Ex 1.2.4

5. 수업시간에 다룬 λ -system의 두 정의가 동치임을 보여라.

6. Show that a class that is both a π -system and λ -system is a σ -algebra.

7. A class \mathcal{M} of subsets of Ω is monotone if it is closed under the formation of monotone unions and intersections:

(i) $A_1, A_2, \dots \in \mathcal{M}$ and $A_n \uparrow A$ imply $A \in \mathcal{M}$

(ii) $A_1, A_2, \dots \in \mathcal{M}$ and $A_n \downarrow A$ imply $A \in \mathcal{M}$

Show that, if \mathcal{A} is an algebra and \mathcal{M} is a monotone class, then $\mathcal{A} \subset \mathcal{M}$ implies $\sigma(\mathcal{A}) \subset \mathcal{M}$.