

Homework 1.

Chapter 1 (Rudin): 5

Chapter 2 (Rudin): 2, 5, 7, 9

1.- Prove that if $f: A \rightarrow B$ is bijective and $g: B \rightarrow C$ is bijective, then the composition $g \circ f$ is a bijective map of A onto C .

2.- Let S be a nonempty subset of \mathbb{R} that is bounded above, and let a be any number in \mathbb{R} . Define the set:
$$a + S := \{a + s : s \in S\}$$

Show that

$$\sup(a + S) = a + \sup S.$$