

Exercise 5.8. [200] Let's fix an integer $N \geq 2$ that it is not a perfect square. Consider the subset F of \mathbb{R} given by the numbers x that can be written as $x = a + b\sqrt{N}$, with $a, b \in \mathbb{Q}$; we associate the operations of \mathbb{R} : show that F is a field.

Solution 1. [201]