

Exercise 1. Let S be the subset of the real line consisting of those points whose decimal expansion only contains the digits 0 and 1. Is S a Lebesgue measurable set?

Exercise 2. Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be an affine function and suppose that $A \in \mathbb{R}$ is a null-set. Does it follow that $f(A)$ is a null set?

Also complete exercises 2.4 and 2.5.