

## Countable sets in $\mathbb{R}$ are Borel sets

Asked 7 years, 4 months ago Active 7 years, 4 months ago Viewed 3k times



I am aware that this is a very general question, but why is every countable set in the real numbers a Borel set?

measure-theory

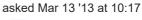


real-analysis



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- 3 Do you know what "Borel set" means? Chris Eagle Mar 13 '13 at 10:19
- 3 And no, this isn't a very general question. This is a very specific question. Chris Eagle Mar 13 '13 at 10:19

## 1 Answer





Every singleton is a Borel set,  $\{x\} = \bigcap_{n \in \mathbb{N}} (x - \frac{1}{n}, x + \frac{1}{n}).$ 

And the countable union of Borel sets is a Borel set. 12



answered Mar 13 '13 at 10:21







thank you! with more or less the same approach I could show now that countable sets in R have measure zero. - user62487 Mar 13 '13 at 16:09