

## METRIC COMPLETIONS

## Why

We can always work with complete metric spaces.

The justification is that we can always, given an incomplete metric space, construct a larger metric space which contains a subset isomorphic to the original one.

## Result

**Proposition 1.** Let (A,d) be an incomplete metric space. There exists a complete metric space (B,d') with  $C \subset B$  such that (A,d) and (C,d') are isometric and the image under the isometry of C is dense in B.

