

You learn a lot talking math with others. Thus you are **strongly** encouraged to work in groups (up to size 17) on homework. A group is to come to an agreement of the finished paper. Over Blackboard, ONE group member (e.g., Bella) should submit the finished paper while each of the other group members (as so that I can return a commented graded paper to you) should just pull up the assignment on Blackboard and write a note in the white **Comment** box that, e.g., Bella submitted my paper.

Def. (X, d) is a discrete metric space provided X is a nonempty set and $d: X \times X \rightarrow \mathbb{R}$ is

$$d(x, y) = \begin{cases} 1, & x \neq y \\ 0, & x = y. \end{cases}$$

Metric Space Exercise 8. Variant of 2.1.45.8 (p. 91).

Show that each subset B of a discrete metric space (X, d) is open and is closed.