Problem Set #2 - due Fri. Aug 26

In the "usual" topology on the set of real numbers a set is open if and only if it is a union of open intervals. This topological space is denoted by \mathbb{R} .

In the discrete topology on the set of real numbers every subset of the set of real numbers is open; we denote this topological space by \mathbb{R}_d .

1. Which functions from \mathbb{R}_d to \mathbb{R} are continuous?

2. Which functions from \mathbb{R} to \mathbb{R}_d are continuous? (HINT: you will need to use the *least upper bound property* to answer this question.