

Assignment 4: Equivalence Relations

Math 300 – Spring 2019 (Hachtman)

Due Monday, March 11

For each of the following relations on the given sets, determine whether it is an equivalence relation, and prove your answer.

1. The set of people: $x B y$ iff x and y have the same birthday.
2. The set of people: $x C y$ iff x and y have citizenship in the same country.
3. \mathbb{R} : $x R y$ iff $x - y$ is a rational number.
4. \mathbb{R}^3 : $\mathbf{u} S \mathbf{v}$ iff $\mathbf{u} \cdot \mathbf{v} = 0$.

Write up your solutions in L^AT_EX and submit them by email as usual.