## Math 300 Intro Math Reasoning Worksheet 11: Systems of representatives

- (1) Let  $E = \{\langle X, Y \rangle \in P(\mathbb{R})^2 \mid 2023, 2024 \notin X\Delta Y\}.$ 
  - (1) Prove that E is an equivalence relation over  $P(\mathbb{R})$ .
  - (2) Compute  $|P(\mathbb{R})/E|$ .