Math 235 - Dr. Miller - Activity: More Practice with Proofs about Relations

Work on the following together during class, as needed and as time permits.

1. Define a relation R on $\mathbf{R}\times\mathbf{R}$ via $(a,b)R(c,d)$ if $a-b^2 \leq c$. Determine whether R is reflexive, symmetric, transitive, and formally prove each claim.

2. Define a relation R on $\mathcal{P}(\mathbf{Z})$ via ARB if $A \setminus B = \emptyset$. Determine whether R is reflexive, symmetric, transitive, and formally prove each claim.