Sections 4.3 & 4.6 Equivalence Relations

Let A be a set and R be a relation on A.

- R is reflexive on A iff for all $x \in A$, xRx.

- R is symmetric iff for all x and y in A, if xRy then yRx.

- R is transitive iff for all $x, y, z \in A$, if xRy and yRz, then xRz.

A relation R on a set A is an equivalence relation on A iff R is reflexive on A, symmetric, and transitive.

Let R be an equivalence relation on a set A. For $x \in A$, the equivalence class of x determined by R is the set $x/R = \{y \in A : xRy\}$.