

Functions and Relations: Equivalence Relations

Equivalence Relations

Be familiar with the following:

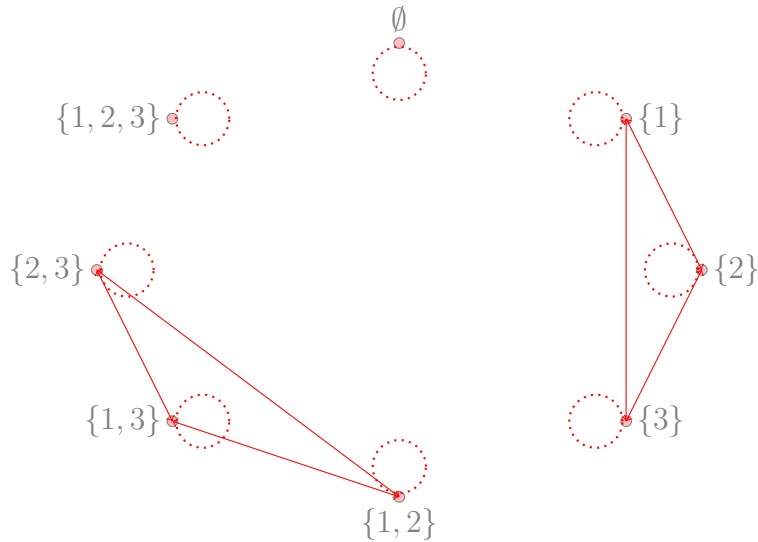
- An Equivalence Relation is a binary relation where the equivalence of two items (nodes) is defined by the rule. A relationship (arrow) is drawn between the two items if they're considered equivalent.

Practice Problems

1. Diagram the relation $R_7 = \{(A, B) \in \wp(S) \times \wp(S) : n(A) = n(B)\}$, where $S = \{1, 2, 3\}$, and identify the properties:
 - Reflexive Irreflexive Neither
 - Symmetric Antisymmetric Neither
 - Transitive Not Transitive
2. Diagram the relation $R_8 = \{(A, B) \in \wp(S) \times \wp(S) : A \cap B = \emptyset\}$, where $S = \{1, 2, 3\}$, and identify the properties:
 - Reflexive Irreflexive Neither
 - Symmetric Antisymmetric Neither
 - Transitive Not Transitive

Answer key

1. $R_7 = \{(A, B) \in \wp(S) \times \wp(S) : n(A) = n(B)\}$



2. $R_8 = \{(A, B) \in \wp(S) \times \wp(S) : A \cap B = \emptyset\}$

