This miniproject deals with the concepts of reflexivity and irreflexivity (see the definition of irreflexive just prior to exercise 9 in the textbook) and how they interact with certain ways of combining relations.

Suppose that R and S are reflexive relations on a set A. Prove or disprove each of the following statements.

(a) $R \cup S$ is reflexive.

(b) $R \cap S$ is reflexive.

(c) $R \oplus S$ is irreflexive.

(d) $R - S$ is irreflexive.

(e) $S \circ R$ is reflexive.