

# Review

- set
- elements of a set
- empty set  $\emptyset$
- subset  $\subseteq$
- union  $\cup$
- intersection  $\cap$
- set difference  $A \setminus B$  or  $A - B$
- disjoint sets
- Power set  $2^A$  of  $A$ ; set of subsets of  $A$
- partition of a set
- ordered pair  $(x, y)$
- Cartesian product  $A \times B$
- binary relation on  $A$  and  $B$
- function from  $A$  to  $B$
- inverse of a relation
- composition of two relations (page 13 top of the text); nonstandard for math
- Properties of binary relations
  - reflexive
  - symmetric
  - transitive
  - antisymmetric
- equivalence relation
- partial order relation
- total order relation
- finite set
- infinite set
- countably infinite set

- countable set: finite or countably infinite
- uncountable set
- mathematical induction
- pigeonhole principle