

Subsets of a fixed set  $U$

Operations  $\emptyset$   $\cap$   $\cup$   $(-)^c$

Propositional Logic  $\leftrightarrow$  model  $\rightarrow$  Sets

Products  $A \times B$   
(Binary) relations  $R \subseteq A \times B$

Sets with structure  
Equivalence relation  
Partial order

Functions  $f: A \rightarrow B$

Special functions: injections, surjections, bijections  
Size of sets, countability

Constructions on sets

Comprehension, product, big union, big intersection,

powerset  $\mathcal{P}(X)$

Rule-based inductive definitions: 3 ways to understand  $I_R$

Well-founded induction