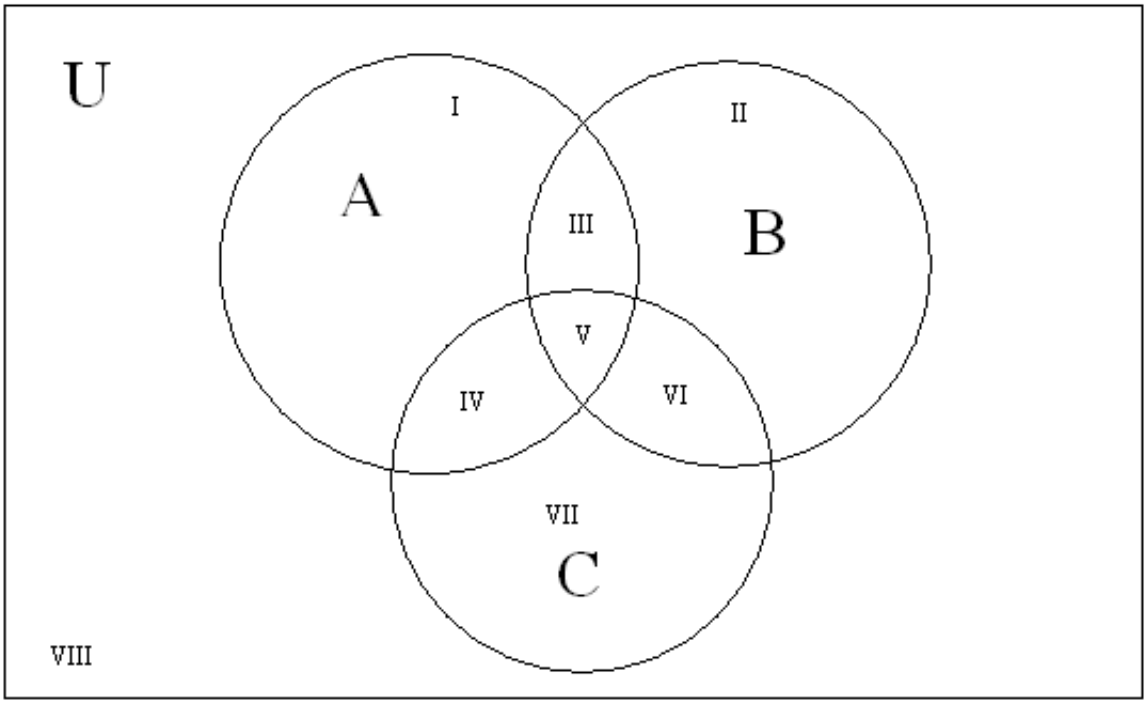
Math 2283 - Introduction to Logic

Homework #6 - 2006.10.16

Due Date - 2006.10.25

Solutions



Consider the above Venn Diagram where the regions are denoted by Roman Numerals. For each roman numeral, find a formula which represents that region of the diagram which uses only intersections, unions and compliments and also only uses the sets A, B, C and not U.

Region I: $A \cap B^c \cap C^c$

Region II: $B \cap A^c \cap C^c$

Region III: $A \cap B \cap C^c$

Region IV: $A \cap C \cap B^c$

Region V: $A \cap B \cap C$

Region VI: $C \cap B \cap A^c$

Region VII: $C \cap A^c \cap B^c$

Region VIII: $(A \cup B \cup C)^c$