

Imamo  $\#(X \cup Y) = \#X + \#Y - \#(X \cap Y)$ , pa je:

$$\begin{aligned}\#(A \cup B \cup C) &= \#(A \cup B) + \#C - \#((A \cup B) \cap C) = \#A + \#B - \#(A \cap B) + \#C - \#((A \cup B) \cap C) = \\ &= \#A + \#B + \#C - \#(A \cap B) - \#((A \cap C) \cup (B \cap C)) = \\ &= \#A + \#B + \#C - \#(A \cap B) - (\#(A \cap C) + \#(B \cap C) - \#((A \cap C) \cap (B \cap C))) = \\ &= \#A + \#B + \#C - \#(A \cap B) - \#(A \cap C) - \#(B \cap C) + \#((A \cap C) \cap (B \cap C)) = \\ &= \#A + \#B + \#C - \#(A \cap B) - \#(A \cap C) - \#(B \cap C) + \#(A \cap B \cap C)\end{aligned}$$

U posljednjem redu je korištena komutativnost, asocijativnost i idempotencija ( $X \cap X = X$ ).