

Exemple simplificació

$$\begin{aligned} & (A \cap (B \cup C) \cap (A \setminus B)) \cap (B \cup C^c) \quad \text{def diferència} \\ &= (A \cap (B \cup C) \cap (A \cap B^c)) \cap (B \cup C^c) \quad \text{distributiva} \\ &= (A \cap ((B \cup C) \cap B^c)) \cap (B \cup C^c) \quad \text{dist.} \\ &= (A \cap ((B \cap B^c) \cup (C \cap B^c))) \cap (B \cup C^c) \quad \text{prop. complen.} \\ &= (A \cap (\emptyset \cup (C \cap B^c))) \cap (B \cup C^c) \quad \begin{array}{l} \emptyset \text{ neutro } \cup \\ \text{assoc.} \end{array} \\ &= A \cap ((C \cap B^c) \cap (B \cup C^c)) \quad \begin{array}{l} \text{L. Morgan} \\ \text{commut} \end{array} \\ &= A \cap ((B \cup C^c)^c \cap (B \cup C^c)) \quad \text{Prop. complen.} \\ &= A \cap \emptyset \quad \begin{array}{l} \emptyset \text{ absorb } \cap \\ \text{commut} \end{array} \quad \text{commut} \\ &= \emptyset \end{aligned}$$