# Exemple simplificació

$$\left(A \cap (B \cup C) \cap (A \setminus B)\right) \cap (B \cup C^c) \quad \text{def diferència}$$

$$= \left(A \cap (B \cup C) \cap (A \cap B^c)\right) \cap (B \cup C^c) \quad \text{distributiva}$$

$$= \left(A \cap ((B \cup C) \cap B^c)\right) \cap (B \cup C^c) \quad \text{dist.}$$

$$= \left(A \cap ((B \cap B^c) \cup (C \cap B^c))\right) \cap (B \cup C^c) \quad \text{prop complem.}$$

$$= \left(A \cap (\emptyset \cup (C \cap B^c))\right) \cap (B \cup C^c) \quad \emptyset \text{ neutre } \cup$$

$$= A \cap \left((C \cap B^c) \cap (B \cup C^c)\right) \quad \text{L. Morgan, assoc, commut}$$

$$= A \cap \left((B \cup C^c)^c \cap (B \cup C^c)\right) \quad \text{Prop. complem}$$

$$= A \cap \emptyset \quad \emptyset \text{ absorb } \cap$$

$$= \emptyset$$