Practical 9

Minimizing a given Boolean expression to find minimal expressions

1.To obtain minimized expression in DNF, we can use BooleanMinimize

In[13]:= `BooleanMinimize[(a ∧ b) ∨ (! a ∧ b ∧ ! c)]`

Out[13]=

(a && b) || (b && ! c)

2.To obtain minimized expression in CNF, we can use BooleanMinimize with specification for CNF as under

In[14]:= `BooleanMinimize[(a ∧ b) ∨ (! a ∧ b ∧ ! c), "CNF"]`

Out[14]=

(a || ! c) && b

3.To obtain minimized expression in whichever form as a minimum length, we can use Simplify

In[15]:= `Simplify[(a ∧ b) ∨ (! a ∧ b ∧ ! c)]`

Out[15]=

(a || ! c) && b