1 Definitions

Definition 1.1. The *Boolean space* B is the set with elements $\{0, 1\}$.

Definition 1.2. A *Boolean variable* is either the constant $0 \in B$ or $1 \in B$.

Definition 1.3. The *negation* of a Boolean variable b is denoted $\bar{b}$ and is such that: $\bar{0} = 1$ and $\bar{1} = 0$.

Definition 1.4. A *literal* is a Boolean variable or its negation, e.g. a, $\bar{b}$.

Definition 1.5. A *product*, or *cube* is a Boolean product of literals, e.g. $b\bar{c} \in B^2$.

Definition 1.6. A *cover* is a set of products, e.g. $\{b\bar{c}, b\} \subset B^2$.

Definition 1.7. The *cardinality* of a cover C is the number of cubes in the cover. It is denoted $|C|$, e.g. $|\{ab\bar{c}, b\}| = 2$.

Definition 1.8. A *completely specified Boolean function (CSF)* is a function of the form $f : B^k \to B$ for some $k \in \mathbb{N}$.

Definition 1.9. The Boolean function 1 is the constant boolean function that always maps to $1 \in B$.

Definition 1.10. A *complement*, or a negative phase, of a cover C is a cover D such that $C \cup D$ is a *tautology*, that is, the Boolean function 1.