

Boolean Algebra

Daniel Mao

Contents

1	First Chapter	1
1.1	First Section	1

Chapter 1

First Chapter

1.1 First Section

Proposition 1.1.1 (Laws of Boolean Algebra).

$\overline{\overline{X}} = X$		
$X + 0 = X$	$X \cdot 1 = X$	(identity)
$X + 1 = 1$	$X \cdot 0 = 0$	(zero/one)
$X + X = X$	$XX = X$	(absorption)
$X + \overline{X} = 1$	$X\overline{X} = 0$	(inverse)
$X + Y = Y + X$	$XY = YX$	(commutative)
$X + (Y + Z) = (X + Y) + Z$	$X(YZ) = (XY)Z$	(associative)
$X(Y + Z) = XY + XZ$	$X + YZ = (X + Y)(X + Z)$	(distributive)
$\overline{X + Y} = \overline{X} \cdot \overline{Y}$	$\overline{XY} = \overline{X} + \overline{Y}$	(De-Morgan)