Considering the given set B along with binary operations +,.,’, if it forms a Boolean algebra, it satisfies the following properties:
Identity Laws
$x + 0 = x$
$x \cdot 1 = x$

Compliments Laws
$x + x' = 1$
$x \cdot x' = 0$

Associative Laws
$(x + y) + z = x + (y + z)$
$(x \cdot y) \cdot z = x \cdot (y \cdot z)$

Commutative Laws
$x + y = y + x$
$x \cdot y = y \cdot x$

Distributive Laws
$x + (y \cdot z) = (x + y) \cdot (x + z)$
$x \cdot (y + z) = (x \cdot y) + (x \cdot z)$

The consequences of the above axioms of Boolean algebra are:
(1) Idempotent Laws: $x + x = x$ and $x \cdot x = x$
(2) Domination Laws: $x + 1 = 1$ and $x \cdot 0 = 0$
(3) Absorption Laws: $(x \cdot y) + x = x$ and $(x + y) \cdot x = x$
(4) $x + y = 1$ and $x \cdot y = 0$ if and only if $y = x'$
(5) Double Complements Law: $(x')'' = x$
(6) DeMorgan’s Laws: $(x \cdot y)' = x' + y'$ and $(x + y)' = x' \cdot y'$

For a set(along with +,.) to be Boolean algebra, it should satisfy the following conditions:

a) If a belongs to the set B, so should a’.
b) If a and b belong to the set B, so should a+b and a.b.

We will use this definition to prove that the given tuple < B , . , + ,’ , I+ , I. > forms a Boolean algebra.

In this set, “zero” is defined as that element of set B which satisfies the identity laws, for any element a of set B, a.a’= “zero” and a + “zero”= a.

Likewise, “one” is defined as a.“one”=a and a + a’= “one”.

In the question, identities of + and . operations are defined as I+=1 and I.=N. So, considering the above definitions, we can say that “zero” is 1 and “one” is N.