This project asks you to prove some of the properties of Boolean algebras.

(a) Using only the eight properties in the definition of a Boolean algebra as given in class, give a *formal* proof of the second Domination property: $\forall x, x \cdot 0 = 0$. Recall that a formal proof shows every step (no matter how trivial) and gives a reason for every step, generally shown in a two-column format.

(b) Using only the eight properties in the definition of a Boolean algebra as given in class and the Domination property(s), give a *formal* proof of the second Absorption property: $\forall x \forall y, x (x + y) = x$.

(c) Using only the eight properties in the definition of a Boolean algebra as given in class, give a *formal* proof of the second Idempotent property: $\forall x, x \cdot x = x$.