Exercise 6.1: Fuzzy Complement (5 Points)

Prove that a fuzzy complement obtained from an arbitrary increasing generator must be involutive, i.e. $\forall a \in [0, 1] : c(c(a)) = a$.

Exercise 6.2: Dual Triples (5 Points)

Prove that the following operator triples are dual triples.

(a) $t(a, b) = ab$,  
$s(a, b) = a + b - ab$,  
$c(a) = 1 - a$

(b) $t(a, b) = \max\{0, a + b - 1\}$,  
$s(a, b) = \min\{1, a + b\}$,  
$c(a) = 1 - a$