

One Plus One Equals Two

- 0) $\forall a : \forall b : (a + Sb) = S(a + b)$ [axiom]
- 1) $\forall b : (S0 + Sb) = S(S0 + b)$ [specification of a to S0 in theorem 0]
- 2) $(S0 + S0) = S(S0 + 0)$ [specification of b to 0 in theorem 1]
- 3) $\forall a : (a + 0) = a$ [axiom]
- 4) $(S0 + 0) = S0$ [specification of a to S0 in theorem 3]
- 5) $S(S0 + 0) = SS0$ [successor of theorem 4]
- 6) $(S0 + S0) = SS0$ [transitivity of theorem 2 and theorem 5]