

# thm\_2Ebool\_2EONE\_\_ONE\_\_THM (TMXwwtY- HFS1jWUBmF1Ne63Cu4t6YipeHtFo)

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**Definition 1** We define  $c\_2Emin\_2E\_3D\_3D\_3E$  to be  $\lambda P \in 2.\lambda Q \in 2.inj\_o (p P \Rightarrow p Q)$  of type  $\iota$ .

**Definition 2** We define  $c\_2Emin\_2E\_3D$  to be  $\lambda A.\lambda x \in A.\lambda y \in A.inj\_o (x = y)$  of type  $\iota \Rightarrow \iota$ .

**Definition 3** We define  $c\_2Ebool\_2ET$  to be  $(ap (ap (c\_2Emin\_2E\_3D (2^2)) (\lambda V0x \in 2.V0x)) (\lambda V1x \in 2.V1x))$

**Definition 4** We define  $c\_2Ebool\_2E\_21$  to be  $\lambda A\_27a : \iota.(\lambda V0P \in (2^{A\_27a}).(ap (ap (c\_2Emin\_2E\_3D (2^{A\_27a}))$

**Definition 5** We define  $c\_2Ebool\_2EONE\_ONE$  to be  $\lambda A\_27a : \iota.\lambda A\_27b : \iota.(\lambda V0f \in (A\_27b^{A\_27a}).(ap (c\_2E$

**Theorem 1**

$$\forall A\_27a.nonempty A\_27a \Rightarrow \forall A\_27b.nonempty A\_27b \Rightarrow ( \\ \forall V0f \in (A\_27b^{A\_27a}).((p (ap (c\_2Ebool\_2EONE\_ONE A\_27a \\ A\_27b) V0f)) \Leftrightarrow (\forall V1x1 \in A\_27a.(\forall V2x2 \in A\_27a.(((ap \\ V0f V1x1) = (ap V0f V2x2)) \Rightarrow (V1x1 = V2x2))))))$$