

# t56\_normform (TMYXtwjh- BGG33unJTwhDP2B3PGApHS7gjLZ)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k12\_normform : \iota \Rightarrow \iota$  be given. Let  $k5\_finsub\_1 : \iota \Rightarrow \iota$  be given. Let  $k7\_normform : \iota \Rightarrow \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_lattices : \iota \Rightarrow o$  be given. Let  $l3\_lattices : \iota \Rightarrow o$  be given. Let  $k8\_normform : \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_lattices : \iota \Rightarrow \iota$  be given. Let  $k9\_normform : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_setwiseo : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_lattices : \iota \Rightarrow \iota$  be given. Let  $k10\_normform : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. k1\_xboole\_0 \in ReplSep (toset (\lambda X1 : \iota. m1\_subset\_1 \\ & \quad X1 (k5\_finsub\_1 (k7\_normform X0)))) (\lambda X1 : \iota. \forall X2. ( \\ & \quad m2\_subset\_1 X2 (k2\_zfmisc\_1 (k5\_finsub\_1 X0) (k5\_finsub\_1 X0)) \\ & \quad (k7\_normform X0)) \Rightarrow (\forall X3. (m2\_subset\_1 X3 (k2\_zfmisc\_1 ( \\ & \quad k5\_finsub\_1 X0) (k5\_finsub\_1 X0)) (k7\_normform X0)) \Rightarrow (((X2 \in X1) \wedge \\ & \quad ((X3 \in X1) \wedge (r1\_normform (k5\_finsub\_1 X0) (k5\_finsub\_1 X0) X2 X3))) \Rightarrow \\ & \quad (X2 = X3)))) (\lambda X1 : \iota. X1) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (v3\_lattices (k12\_normform X0)) \wedge (l3\_lattices (k12\_normform X0)) \quad (3)$$

Assume the following.

$$\begin{aligned}
& \forall X0.k8\_normform\ X0 = ReplSep\ (toset\ (\lambda X1 : \iota.m1\_subset\_1 \\
& \quad X1\ (k5\_finsub\_1\ (k7\_normform\ X0))))\ (\lambda X1 : \iota.\forall X2.( \\
& \quad m2\_subset\_1\ X2\ (k2\_zfmisc\_1\ (k5\_finsub\_1\ X0)\ (k5\_finsub\_1\ X0)) \\
& \quad (k7\_normform\ X0)) \Rightarrow (\forall X3.(m2\_subset\_1\ X3\ (k2\_zfmisc\_1\ ( \\
& \quad k5\_finsub\_1\ X0)\ (k5\_finsub\_1\ X0))\ (k7\_normform\ X0)) \Rightarrow (((X2 \in X1) \wedge \\
& \quad ((X3 \in X1) \wedge (r1\_normform\ (k5\_finsub\_1\ X0)\ (k5\_finsub\_1\ X0)\ X2\ X3))) \Rightarrow \\
& \quad (X2 = X3)))\ (\lambda X1 : \iota.X1)
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((v3\_lattices\ X1) \wedge (l3\_lattices\ X1)) \Rightarrow ( \\
& \quad (X1 = k12\_normform\ X0) \Leftrightarrow ((u1\_struct\_0\ X1 = k8\_normform\ X0) \wedge (\forall X2. \\
& \quad (m2\_subset\_1\ X2\ (k5\_finsub\_1\ (k7\_normform\ X0))\ (k8\_normform\ X0)) \Rightarrow \\
& \quad (\forall X3.(m2\_subset\_1\ X3\ (k5\_finsub\_1\ (k7\_normform\ X0))\ (k8\_normform \\
& \quad X0)) \Rightarrow ((k1\_binop\_1\ (u2\_lattices\ X1)\ X2\ X3 = k9\_normform\ X0\ (k5\_setwiseo \\
& \quad (k7\_normform\ X0)\ X2\ X3)) \wedge (k1\_binop\_1\ (u1\_lattices\ X1)\ X2\ X3 = k9\_normform \\
& \quad X0\ (k10\_normform\ X0\ X2\ X3))))))
\end{aligned} \tag{5}$$

**Theorem 1**  $\forall X0.m1\_subset\_1\ k1\_xboole\_0\ (u1\_struct\_0\ (k12\_normform\ X0)).$