

t47_member_1 (TMVixQZrryQh- nAf6hYQZX35TK1rkSaGBAoG)

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Let $v1_membered : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_member_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_numbers : \iota$ be given. Let $k3_binop_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. ((v1_membered X0) \wedge (v1_membered X1)) \Rightarrow (v1_membered (k9_member_1 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (v1_membered X0) \Rightarrow (\forall X1. (r1_tarski X0 X1) \Leftrightarrow (\forall X2. (v1_xcmplx_0 X2) \Rightarrow ((X2 \in X0) \Rightarrow (X2 \in X1)))) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1_membered X0) \Rightarrow (\forall X1. (v1_membered X1) \Rightarrow (k9_member_1 \\ X0 X1 = ReplSep2 (toset (\lambda X2 : \iota. m1_subset_1 X2 k2_numbers)) \\ (\lambda X2 : \iota. toset (\lambda X3 : \iota. m1_subset_1 X3 k2_numbers)) (\\ \lambda X2 : \iota. \lambda X3 : \iota. (X2 \in X0) \wedge (X3 \in X1)) (\lambda X2 : \iota. \lambda X3 : \\ \iota. k3_binop_2 X2 X3))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_membered X0) \wedge (v1_membered X1)) \Rightarrow (k9_member_1 X0 X1 = k9_member_1 X1 X0) \quad (4)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k2_numbers) \Rightarrow (v1_xcmplx_0 X0) \quad (5)$$

Theorem 1

$$\begin{aligned} \forall X0. (v1_membered X0) \Rightarrow (\forall X1. (v1_membered X1) \Rightarrow (\forall X2. \\ (v1_membered X2) \Rightarrow (\forall X3. (v1_membered X3) \Rightarrow (((r1_tarski \\ X0 X1) \wedge (r1_tarski X2 X3)) \Rightarrow (r1_tarski (k9_member_1 X0 X2) (k9_member_1 \\ X1 X3)))))) \end{aligned}$$