

t12_tbsp_1 (TM-
brt91F8cRj6XWcLt2TWFzKPWN4BKpZmWM)

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Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v6_metric_1 : \iota \Rightarrow o$ be given. Let $v8_metric_1 : \iota \Rightarrow o$ be given. Let $v9_metric_1 : \iota \Rightarrow o$ be given. Let $l1_metric_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k9_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k4_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k2_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.((v6_metric_1 X0) \wedge ((v8_metric_1 X0) \wedge ((v9_metric_1 \\ X0) \wedge (l1_metric_1 X0)))) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ X0)) \Rightarrow (\forall X2.(m1_subset_1 X2 (u1_struct_0 X0)) \Rightarrow (r1_xxreal_0 \\ k6_numbers (k4_metric_1 X0 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (\neg(X1 \neq k1_xboole_0) \wedge (\forall X2.(m1_subset_1 X2 X0) \Rightarrow (\neg X2 \in X1))) \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ (r1_xxreal_0 X0 X2)))) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.(l1_metric_1 X0) \Rightarrow ((\forall X1.(m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (k2_metric_1 X0 X1 X1 = k6_numbers)) \Leftrightarrow (v6_metric_1 X0)) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(l1_metric_1 X1) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X1)) \Rightarrow ((X3 \in k9_metric_1 X1 X2 X0) \Leftrightarrow ((\neg v2_struct_0 \\ & X1) \wedge (\neg r1_xxreal_0 X0 (k2_metric_1 X1 X2 X3))))))) \end{aligned} \quad (6)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v8_metric_1 X0) \wedge (l1_metric_1 \\ & X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ & X0)))) \Rightarrow (k4_metric_1 X0 X1 X2 = k2_metric_1 X0 X1 X2) \end{aligned} \quad (8)$$

Assume the following.

$$\exists X0.v1_xboole_0 X0 \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l1_metric_1 X0) \wedge ((m1_subset_1 \\ & X1 (u1_struct_0 X0)) \wedge (v1_xreal_0 X2))) \Rightarrow (m1_subset_1 (k9_metric_1 \\ & X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v8_metric_1 X0) \wedge (l1_metric_1 \\ & X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ & X0)))) \Rightarrow (m1_subset_1 (k4_metric_1 X0 X1 X2) k1_numbers) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v8_metric_1 X0) \wedge (l1_metric_1 \\ & X0)) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 \\ & X0)))) \Rightarrow (k4_metric_1 X0 X1 X2 = k4_metric_1 X0 X2 X1) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (13)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (14)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v6_metric_1 X0) \wedge ((v8_metric_1 \\ & X0) \wedge ((v9_metric_1 X0) \wedge (l1_metric_1 X0)))))) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 (u1_struct_0 X0)) \Rightarrow (\forall X2.(v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 \\ & X2 k6_numbers) \Rightarrow (k9_metric_1 X0 X1 X2 = k1_xboole_0)))) \end{aligned}$$