

t1_pcomps_1

(TMJ8QkdvQUdzyuNCYwWwULsj2HVobntmQhK)

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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 $r1_xreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k9_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $k2_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((r1_xreal_0 X0 X1) \wedge (r1_xreal_0 X1 X2)) \Rightarrow \\ & (r1_xreal_0 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(m1_subset_1 X1 (k1_zfmisc_1 X0)) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (k1_zfmisc_1 X0)) \Rightarrow ((\forall X3.(m1_subset_1 \\ & X3 X0) \Rightarrow ((X3 \in X1) \Rightarrow (X3 \in X2))) \Rightarrow (r1_tarski X1 X2))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(l1_metric_1 X1) \Rightarrow (\forall X2. \\ & (m1_subset_1 X2 (u1_struct_0 X1)) \Rightarrow (\forall X3.(m1_subset_1 X3 \\ & (u1_struct_0 X1)) \Rightarrow ((X3 \in k9_metric_1 X1 X2 X0) \Leftrightarrow ((\neg v2_struct_0 \\ & X1) \wedge (\neg r1_xreal_0 X0 (k2_metric_1 X1 X2 X3))))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l1_metric_1 X0) \wedge ((m1_subset_1 \\ & X1 (u1_struct_0 X0)) \wedge (v1_xreal_0 X2))) \Rightarrow (m1_subset_1 (k9_metric_1 \\ & X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 X0))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((l1_metric_1 X0) \wedge ((m1_subset_1 \\ & X1 (u1_struct_0 X0)) \wedge (m1_subset_1 X2 (u1_struct_0 X0)))) \Rightarrow (m1_subset_1 \\ & (k2_metric_1 X0 X1 X2) k1_numbers) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (6)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (7)$$

Theorem 1

$$\begin{aligned} & \forall X0.(l1_metric_1 X0) \Rightarrow (\forall X1.(m1_subset_1 X1 (u1_struct_0 \\ & \quad X0)) \Rightarrow (\forall X2.(v1_xreal_0 X2) \Rightarrow (\forall X3.(v1_xreal_0 X3) \Rightarrow \\ & ((r1_xxreal_0 X2 X3) \Rightarrow (r1_tarski (k9_metric_1 X0 X1 X2) (k9_metric_1 \\ & \quad X0 X1 X3)))))) \end{aligned}$$