

t11_metric_1

(TMQWuzKqmb6Dsh2pKnbyjmg4Mz8StTYqYmx)

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Let $v1_xreal_0 : \iota \Rightarrow o$ 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 $k9_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((l1_metric_1 X0) \wedge ((m1_subset_1 X1 (u1_struct_0 X0)) \wedge (v1_xreal_0 X2))) \Rightarrow (m1_subset_1 (k9_metric_1 X0 X1 X2) (k1_zfmisc_1 (u1_struct_0 X0))) \quad (1)$$

Assume the following.

$$\forall X0. (v1_xboole_0 X0) \Leftrightarrow (\forall X1. \neg X1 \in X0) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (l1_metric_1 X0) \Rightarrow (\forall X1. (m1_subset_1 X1 (u1_struct_0 X0)) \Rightarrow (\forall X2. (v1_xreal_0 X2) \Rightarrow (\forall X3. (m1_subset_1 X3 (k1_zfmisc_1 (u1_struct_0 X0))) \Rightarrow (((\neg v2_struct_0 X0) \Rightarrow ((X3 = k9_metric_1 X0 X1 X2) \Leftrightarrow (X3 = ReplSep (toset (\lambda X4 : \iota. m1_subset_1 X4 (u1_struct_0 X0))) (\lambda X4 : \iota. \neg r1_xxreal_0 X2 (k2_metric_1 X0 X1 X4)) (\lambda X4 : \iota. X4)))) \wedge ((v2_struct_0 X0) \Rightarrow ((X3 = k9_metric_1 X0 X1 X2) \Leftrightarrow (v1_xboole_0 X3)))))))))) \end{aligned} \quad (3)$$

Theorem 1

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