

t9\_metric\_2  
(TMUsVz2ABtdDPEM68P1y2vUHrJkJ45LjAxJ)

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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  $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_metric\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_metric\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_metric\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (X1 \in k1\_metric\_2 X0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (\neg (r1\_xboole\_0 X0 X1) \wedge (\forall X2. \neg (X2 \in X0) \wedge (X2 \in X1))) \wedge (\neg (\exists X2. (X2 \in X0) \wedge (X2 \in X1)) \wedge (r1\_xboole\_0 X0 X1)) \quad (2)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (((r3\_metric\_2 X0 X1 X2) \wedge (r3\_metric\_2 X0 X2 X3)) \Rightarrow (r3\_metric\_2 X0 X1 X3)))))) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v8\_metric\_1 X0) \wedge (l1\_metric\_1 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow ((r3\_metric\_2 X0 X1 X2) \Rightarrow (r3\_metric\_2 X0 X2 X1)) \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (&((-v2\_struct\_0 X0) \wedge ((v8\_metric\_1 \\ &X0) \wedge (l1\_metric\_1 X0))) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge \\ &m1\_subset\_1 X2 (u1\_struct\_0 X0))) \Rightarrow ((r3\_metric\_2 X0 X1 X2) \Leftrightarrow (r1\_metric\_2 \\ &X0 X1 X2)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0. (&((-v2\_struct\_0 X0) \wedge (l1\_metric\_1 X0)) \Rightarrow (\forall X1. \\ &(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k1\_metric\_2 X0 X1 = ReplSep \\ &(toset (\lambda X2 : \iota. m1\_subset\_1 X2 (u1\_struct\_0 X0))) (\lambda X2 : \\ &\iota. r1\_metric\_2 X0 X1 X2) (\lambda X2 : \iota. X2)))) \end{aligned} \quad (6)$$

**Theorem 1**

$$\begin{aligned} \forall X0. (&((-v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v8\_metric\_1 \\ &X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1. (m1\_subset\_1 \\ &X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 \\ &X0)) \Rightarrow ((-r1\_xboole\_0 (k1\_metric\_2 X0 X1) (k1\_metric\_2 X0 X2)) \Leftrightarrow \\ &(r3\_metric\_2 X0 X1 X2)))) \end{aligned}$$