

## t30\_metric\_1

(TMRSi6khAdGdbAsJoXhzUSwnXyXn4MP8bBB)

October 27, 2020

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  $r1\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v8\_metric\_1 X0) \wedge (l1\_metric\_1 X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (k4\_metric\_1 X0 X1 X2 = k2\_metric\_1 X0 X1 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. (((v8\_metric\_1 X0) \wedge (l1\_metric\_1 X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 (k4\_metric\_1 X0 X1 X2) k1\_numbers) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((l1\_metric\_1 X0) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (m1\_subset\_1 (k2\_metric\_1 X0 X1 X2) k1\_numbers) \quad (3)$$

Assume the following.

$$\forall X0. (l1\_metric\_1 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow ((r1\_metric\_1 X0 X1 X2 X3) \Leftrightarrow ((X1 \neq X2) \wedge ((X1 \neq X3) \wedge ((X2 \neq X3) \wedge (k2\_metric\_1 X0 X1 X3 = k7\_real\_1 (k2\_metric\_1 X0 X1 X2) (k2\_metric\_1 X0 X2 X3)))))))))) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 k1\_numbers) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k7\_real\_1 X0 X1 = k7\_real\_1 X1 X0) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((v8\_metric\_1 X0)\wedge(l1\_metric\_1 X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 X0))))\Rightarrow(k4\_metric\_1 X0 X1 X2 = k4\_metric\_1 X0 X2 X1) \quad (6)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (7)$$

**Theorem 1**

$$\begin{aligned} &\forall X0.((\neg v2\_struct\_0 X0)\wedge((v6\_metric\_1 X0)\wedge((v8\_metric\_1 X0)\wedge((v9\_metric\_1 X0)\wedge(l1\_metric\_1 X0))))))\Rightarrow(\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0))\Rightarrow(\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0))\Rightarrow((r1\_metric\_1 X0 X1 X2 X3)\Rightarrow(r1\_metric\_1 X0 X3 X2 X1)))))) \end{aligned}$$