

t18\_metric\_1  
(TMFuyQk6f5hvn2dqPVfracycNQ3rU4uEE9L)

October 27, 2020

Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $k10\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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. Assume the following.

$$\forall X0. \forall X1. (\forall X2. (X2 \in X0) \Leftrightarrow (X2 \in X1)) \Rightarrow (X0 = X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. (l1\_metric\_1 X1) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3. (m1\_subset\_1 X3 \\ (u1\_struct\_0 X1)) \Rightarrow ((X3 \in k10\_metric\_1 X1 X2 X0) \Leftrightarrow ((\neg v2\_struct\_0 \\ X1) \wedge (r1\_xxreal\_0 (k2\_metric\_1 X1 X2 X3) X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (\forall X2. \\ (X2 \in X1) \Rightarrow (X2 \in X0)) \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. ((l1\_metric\_1 X0) \wedge ((m1\_subset\_1 \\ X1 (u1\_struct\_0 X0)) \wedge (v1\_xreal\_0 X2))) \Rightarrow (m1\_subset\_1 (k10\_metric\_1 \\ X0 X1 X2) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (5)$$

**Theorem 1**

$$\begin{aligned} \forall X0. (v1\_xreal\_0 X0) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ( \\ l1\_metric\_1 X1)) \Rightarrow (\forall X2. (m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow \\ (k10\_metric\_1 X1 X2 X0 = \text{ReplSep} (\text{toset} (\lambda X3 : \iota. m1\_subset\_1 \\ X3 (u1\_struct\_0 X1))) (\lambda X3 : \iota. r1\_xxreal\_0 (k2\_metric\_1 X1 \\ X2 X3) X0) (\lambda X3 : \iota. X3)))) \end{aligned}$$