

t22\_tbsp\_1  
(TMKQpYaLeS5TwDv5JTFyRF76fyVEhFYl5A3)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_metric\_1 : \iota \Rightarrow o$  be given. Let  $v7\_metric\_1 : \iota \Rightarrow o$  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  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v6\_tbsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_tbsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_metric\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 X0) \wedge ((v8\_metric\_1 \\ & X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)) \Rightarrow (\neg(X1 \neq X2) \wedge (r1\_xreal\_0 (k4\_metric\_1 X0 X1 X2) k6\_numbers)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. \neg(X0 \in X1) \wedge (v1\_xboole\_0 X1) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (3)$$

Assume the following.

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

Assume the following.

$$\forall X0. \forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 (k1\_tarski X0) (k1\_zfmisc\_1 X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1))\Leftrightarrow(r1\_tarski X0 X1) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 X1)\Rightarrow((v1\_xboole\_0 X1)\vee (X0 \in X1)) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((v6\_metric\_1 X0)\wedge((v7\_metric\_1 \\ X0)\wedge((v8\_metric\_1 X0)\wedge((v9\_metric\_1 X0)\wedge(l1\_metric\_1 X0))))))\Rightarrow \\ (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0))\Rightarrow(k1\_metric\_2 X0 \\ X1 = k6\_domain\_1 (u1\_struct\_0 X0) X1)) \end{aligned} \quad (8)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(((v8\_metric\_1 X0)\wedge(l1\_metric\_1 \\ X0))\wedge((m1\_subset\_1 X1 (u1\_struct\_0 X0))\wedge(m1\_subset\_1 X2 (u1\_struct\_0 \\ X0))))\Rightarrow(k4\_metric\_1 X0 X1 X2 = k2\_metric\_1 X0 X1 X2) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\exists X1.m1\_subset\_1 X1 X0 \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0 X0)\wedge((v6\_metric\_1 X0)\wedge \\ (l1\_metric\_1 X0)))\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0))))\Rightarrow(m1\_subset\_1 (k3\_tbsp\_1 X0 X1) k1\_numbers) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge (l1\_metric\_1 \\
& \quad X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& \quad X0))) \Rightarrow ((v6\_tbsp\_1 X1 X0) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow \\
& \quad (((X1 \neq k1\_xboole\_0) \Rightarrow ((X2 = k3\_tbsp\_1 X0 X1) \Leftrightarrow ((\forall X3.(m1\_subset\_1 \\
& \quad X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& \quad X0)) \Rightarrow (((X3 \in X1) \wedge (X4 \in X1)) \Rightarrow (r1\_xxreal\_0 (k2\_metric\_1 X0 X3 X4) \\
& \quad X2)))))) \wedge (\forall X3.(m1\_subset\_1 X3 k1\_numbers) \Rightarrow ((\forall X4. \\
& \quad (m1\_subset\_1 X4 (u1\_struct\_0 X0)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 \\
& \quad (u1\_struct\_0 X0)) \Rightarrow (((X4 \in X1) \wedge (X5 \in X1)) \Rightarrow (r1\_xxreal\_0 (k2\_metric\_1 \\
& \quad X0 X4 X5) X3)))))) \Rightarrow (r1\_xxreal\_0 X2 X3)))))) \wedge ((X1 = k1\_xboole\_0) \Rightarrow \\
& \quad ((X2 = k3\_tbsp\_1 X0 X1) \Leftrightarrow (X2 = k6\_numbers))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \tag{15}$$

Assume the following.

$$k1\_xboole\_0 = the (\lambda X0 : \iota.v1\_xboole\_0 X0) \tag{16}$$

Assume the following.

$$\forall X0. \forall X1. (X1 = k1\_tarski X0) \Leftrightarrow (\forall X2. (X2 \in X1) \Leftrightarrow (X2 = X0)) \tag{17}$$

Assume the following.

$$\forall X0. \forall X1. (X0 = X1) \Leftrightarrow ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X0)) \tag{18}$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \tag{19}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\
& \quad X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\
& \quad (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \Rightarrow \\
& \quad (\neg (X1 \neq k1\_xboole\_0) \wedge ((v6\_tbsp\_1 X1 X0) \wedge ((k3\_tbsp\_1 X0 X1 = k6\_numbers) \wedge \\
& \quad (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (X1 \neq k6\_domain\_1 \\
& \quad (u1\_struct\_0 X0) X2))))))
\end{aligned}$$