

t20_metric_3
(TMbH6igiWc83W8ExNEwflWny21zmtcVioCf)

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Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k1_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k16_metric_3 : \iota$ be given. Let $k7_metric_1 : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k3_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_domain_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (k1_metric_1 k1_numbers k1_numbers k7_metric_1 \\ & X0 X1 = k1_metric_1 k1_numbers k1_numbers k7_metric_1 X1 X0)) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\neg(X0 \neq k1_xboole_0) \wedge ((X1 \neq k1_xboole_0) \wedge \\ & (\neg \forall X2.(m1_subset_1 X2 (k2_zfmisc_1 X0 X1) \Rightarrow (X2 = k4_tarski \\ & (k1_xtuple_0 X2) (k2_xtuple_0 X2)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 \\ & X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k3_domain_1 X0 X1 \\ & X2 = k2_xtuple_0 X2) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 \\ & X1) \wedge (m1_subset_1 X2 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_domain_1 X0 X1 \\ & X2 = k1_xtuple_0 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0)\wedge \\ & ((\neg v1_xboole_0 X1)\wedge((m1_subset_1 X2 X0)\wedge(m1_subset_1 X3 X1))))\Rightarrow \\ & (k1_domain_1 X0 X1 X2 X3 = k4_tarski X2 X3) \end{aligned} \tag{5}$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \tag{6}$$

Assume the following.

$$\neg v1_xboole_0 k1_numbers \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 \\ & X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(m1_subset_1 (k3_domain_1 \\ & X0 X1 X2) X1) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X0)\wedge((\neg v1_xboole_0 \\ & X1)\wedge(m1_subset_1 X2 (k2_zfmisc_1 X0 X1))))\Rightarrow(m1_subset_1 (k2_domain_1 \\ & X0 X1 X2) X0) \end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & (v1_funct_1 k16_metric_3)\wedge((v1_funct_2 k16_metric_3 (k2_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers) (k2_zfmisc_1 k1_numbers \\ & k1_numbers)) k1_numbers)\wedge(m1_subset_1 k16_metric_3 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers) \\ & (k2_zfmisc_1 k1_numbers k1_numbers)) k1_numbers))) \end{aligned} \tag{10}$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1_funct_1 X0)\wedge((v1_funct_2 X0 (k2_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers) (k2_zfmisc_1 k1_numbers k1_numbers)) \\ & k1_numbers)\wedge(m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers) (k2_zfmisc_1 k1_numbers \\ & k1_numbers)) k1_numbers))))\Rightarrow((X0 = k16_metric_3)\Leftrightarrow(\forall X1. \\ & (m1_subset_1 X1 k1_numbers)\Rightarrow(\forall X2.(m1_subset_1 X2 k1_numbers)\Rightarrow \\ & (\forall X3.(m1_subset_1 X3 k1_numbers)\Rightarrow(\forall X4.(m1_subset_1 \\ & X4 k1_numbers)\Rightarrow(\forall X5.(m1_subset_1 X5 (k2_zfmisc_1 k1_numbers \\ & k1_numbers))\Rightarrow(\forall X6.(m1_subset_1 X6 (k2_zfmisc_1 k1_numbers \\ & k1_numbers))\Rightarrow(((X5 = k1_domain_1 k1_numbers k1_numbers X1 X3)\wedge \\ & (X6 = k1_domain_1 k1_numbers k1_numbers X2 X4))\Rightarrow(k1_metric_1 (\\ & k2_zfmisc_1 k1_numbers k1_numbers) (k2_zfmisc_1 k1_numbers k1_numbers) \\ & X0 X5 X6 = k7_real_1 (k1_metric_1 k1_numbers k1_numbers k7_metric_1 \\ & X1 X2) (k1_metric_1 k1_numbers k1_numbers k7_metric_1 X3 X4)))))))))) \end{aligned} \tag{11}$$

Theorem 1

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 (k2_zfmisc_1 k1_numbers k1_numbers)) \Rightarrow \\ & (\forall X1.(m1_subset_1 X1 (k2_zfmisc_1 k1_numbers k1_numbers)) \Rightarrow \\ & (k1_metric_1 (k2_zfmisc_1 k1_numbers k1_numbers) (k2_zfmisc_1 \\ & k1_numbers k1_numbers) k16_metric_3 X0 X1 = k1_metric_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers) (k2_zfmisc_1 k1_numbers k1_numbers) k16_metric_3 \\ & X1 X0)) \end{aligned}$$