

t19_real_lat
(TMFsk9m7T93hCPMLxABbaHkBkNURQQoxMgp)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k9_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_funcsdom : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_real_lat : \iota \Rightarrow \iota$ be given. Let $k4_real_lat : \iota \Rightarrow \iota$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m2_funct_2 X1 X0 k1_numbers \\ (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X2.(m2_funct_2 X2 X0 k1_numbers \\ (k9_funct_2 X0 k1_numbers)) \Rightarrow (r2_funct_2 X0 k1_numbers (k1_funcsdom \\ X0 k1_numbers (k5_real_lat X0) X1 X2) (k1_funcsdom X0 k1_numbers \\ (k5_real_lat X0) X2 X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0.(\neg v1_xboole_0 X0) \Rightarrow (\forall X1.(m2_funct_2 X1 X0 k1_numbers \\ (k9_funct_2 X0 k1_numbers)) \Rightarrow (\forall X2.(m2_funct_2 X2 X0 k1_numbers \\ (k9_funct_2 X0 k1_numbers)) \Rightarrow (r2_funct_2 X0 k1_numbers (k1_funcsdom \\ X0 k1_numbers (k5_real_lat X0) X1 (k1_funcsdom X0 k1_numbers (k4_real_lat \\ X0) X1 X2)) X1))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.\forall X3.(((v1_funct_1 X2) \wedge \\ ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\ X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\ X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\ X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((\neg v1_xboole_0 X1) \wedge (m1_funct_2 \\ X2 X0 X1)) \Rightarrow (\forall X3.(m2_funct_2 X3 X0 X1 X2) \Leftrightarrow (m1_subset_1 X3 \\ X2)) \end{aligned} \quad (4)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((\neg v1_xboole_0 \ X1) \wedge (m1_funct_2 \\ & X2 \ X0 \ X1)) \Rightarrow (\forall X3. (m2_funct_2 \ X3 \ X0 \ X1 \ X2) \Rightarrow ((v1_funct_1 \ X3) \wedge \\ & ((v1_funct_2 \ X3 \ X0 \ X1) \wedge (m1_subset_1 \ X3 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & X0 \ X1)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. (\neg v1_xboole_0 \ X1) \Rightarrow (m1_funct_2 \ (k9_funct_2 \ X0 \ X1) \ X0 \ X1) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 \ X0) \Rightarrow ((v1_funct_1 \ (k5_real_lat \ X0)) \wedge \\ & ((v1_funct_2 \ (k5_real_lat \ X0) \ (k2_zfmisc_1 \ (k9_funct_2 \ X0 \ k1_numbers) \\ & (k9_funct_2 \ X0 \ k1_numbers))) \ (k9_funct_2 \ X0 \ k1_numbers)) \wedge (m1_subset_1 \\ & (k5_real_lat \ X0) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ (k9_funct_2 \\ & X0 \ k1_numbers) \ (k9_funct_2 \ X0 \ k1_numbers)) \ (k9_funct_2 \ X0 \ k1_numbers)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 \ X0) \Rightarrow ((v1_funct_1 \ (k4_real_lat \ X0)) \wedge \\ & ((v1_funct_2 \ (k4_real_lat \ X0) \ (k2_zfmisc_1 \ (k9_funct_2 \ X0 \ k1_numbers) \\ & (k9_funct_2 \ X0 \ k1_numbers))) \ (k9_funct_2 \ X0 \ k1_numbers)) \wedge (m1_subset_1 \\ & (k4_real_lat \ X0) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ (k9_funct_2 \\ & X0 \ k1_numbers) \ (k9_funct_2 \ X0 \ k1_numbers)) \ (k9_funct_2 \ X0 \ k1_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((\neg v1_xboole_0 \\ & X1) \wedge (((v1_funct_1 \ X2) \wedge ((v1_funct_2 \ X2 \ (k2_zfmisc_1 \ (k9_funct_2 \\ & X0 \ X1) \ (k9_funct_2 \ X0 \ X1)) \ (k9_funct_2 \ X0 \ X1)) \wedge (m1_subset_1 \ X2 \ (\\ & k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ (k9_funct_2 \ X0 \ X1) \ (k9_funct_2 \\ & X0 \ X1)) \ (k9_funct_2 \ X0 \ X1)))))) \wedge ((m1_subset_1 \ X3 \ (k9_funct_2 \ X0 \\ & X1)) \wedge (m1_subset_1 \ X4 \ (k9_funct_2 \ X0 \ X1)))))) \Rightarrow (m2_funct_2 \ (k1_funcsdom \\ & X0 \ X1 \ X2 \ X3 \ X4) \ X0 \ X1 \ (k9_funct_2 \ X0 \ X1)) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 \ X0) \Rightarrow (\forall X1. (m2_funct_2 \ X1 \ X0 \ k1_numbers \\ & (k9_funct_2 \ X0 \ k1_numbers)) \Rightarrow (\forall X2. (m2_funct_2 \ X2 \ X0 \ k1_numbers \\ & (k9_funct_2 \ X0 \ k1_numbers)) \Rightarrow (r2_funct_2 \ X0 \ k1_numbers \ (k1_funcsdom \\ & X0 \ k1_numbers \ (k5_real_lat \ X0) \ (k1_funcsdom \ X0 \ k1_numbers \ (k4_real_lat \\ & X0) \ X1 \ X2) \ X1) \ X1))) \end{aligned}$$