

t27_ndiff_4 (TMRsE- bKq9oTWpPmU4zZgXqdUuCdKKBywVzS)

October 27, 2020

Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_euclid : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $r1_ndiff_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_1 : \iota$ be given. Let $r1_ndiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_real_ns1 : \iota \Rightarrow \iota$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v1_normsp_1 : \iota \Rightarrow o$ be given. Let $l1_normsp_1 : \iota \Rightarrow o$ be given. Let $k4_struct_0 : \iota \Rightarrow \iota$ be given. Let $k5_euclid : \iota \Rightarrow \iota$ be given. Let $r1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_algstr_0 : \iota \Rightarrow \iota$ be given. Let $k1_real_ns1 : \iota \Rightarrow \iota$ be given. Let $u1_rlvect_1 : \iota \Rightarrow \iota$ be given. Let $k2_real_ns1 : \iota \Rightarrow \iota$ be given. Let $u1_normsp_0 : \iota \Rightarrow \iota$ be given. Let $k3_real_ns1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v1_xboole_0 X0) \wedge (m2_subset_1 X0 k1_numbers k5_numbers)) \Rightarrow \\
 & (\forall X1. ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & \quad k1_numbers (u1_struct_0 (k4_real_ns1 X0)))))) \Rightarrow (\forall X2. (\\
 & \quad v1_xreal_0 X2) \Rightarrow ((r1_ndiff_3 (k4_real_ns1 X0) X1 X2) \Leftrightarrow (\forall X3. \\
 & \quad (m2_subset_1 X3 k1_numbers k5_numbers) \Rightarrow (((r1_xxreal_0 np_1 \\
 & \quad X3) \wedge (r1_xxreal_0 X3 X0)) \Rightarrow (r1_ndiff_3 (k4_real_ns1 np_1) (k1_partfun1 \\
 & \quad k1_numbers (u1_struct_0 (k4_real_ns1 X0)) (u1_struct_0 (k4_real_ns1 \\
 & \quad X0)) (u1_struct_0 (k4_real_ns1 np_1)) X1 (k4_pdiff_1 X3 X0)) X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. \forall X1. ((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\
 & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\
 & \quad X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1))
 \end{aligned} \tag{2}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{3}$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (4)$$

Assume the following.

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

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (6)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow ((\neg v2_struct_0 \ (k4_real_ns1 \ X0)) \wedge ((v1_normsp_1 \ (k4_real_ns1 \ X0)) \wedge (l1_normsp_1 \ (k4_real_ns1 \ X0)))) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7_ordinal1 \ X0) \Rightarrow (\forall X1.((\neg v2_struct_0 \ X1) \wedge \\ ((v1_normsp_1 \ X1) \wedge (l1_normsp_1 \ X1))) \Rightarrow ((X1 = k4_real_ns1 \ X0) \Leftrightarrow \\ ((u1_struct_0 \ X1 = k1_euclid \ X0) \wedge ((k4_struct_0 \ X1 = k5_euclid \ X0) \wedge \\ (r1_funct_2 \ (k2_zfmisc_1 \ (u1_struct_0 \ X1) \ (u1_struct_0 \ X1)) \\ (u1_struct_0 \ X1) \ (k2_zfmisc_1 \ (k1_euclid \ X0) \ (k1_euclid \ X0)) \ (\\ k1_euclid \ X0) \ (u1_algstr_0 \ X1) \ (k1_real_ns1 \ X0)) \wedge (r1_funct_2 \\ (k2_zfmisc_1 \ k1_numbers \ (u1_struct_0 \ X1)) \ (u1_struct_0 \ X1) \ (k2_zfmisc_1 \\ k1_numbers \ (k1_euclid \ X0)) \ (k1_euclid \ X0) \ (u1_rlvect_1 \ X1) \ (k2_real_ns1 \\ X0)) \wedge (r1_funct_2 \ (u1_struct_0 \ X1) \ k1_numbers \ (k1_euclid \ X0) \ k1_numbers \\ (u1_normsp_0 \ X1) \ (k3_real_ns1 \ X0)))))) \quad (8) \end{aligned}$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 \ X0) \wedge (m2_subset_1 \ X0 \ k1_numbers \ k5_numbers)) \Rightarrow \\ (\forall X1.((v1_funct_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ k1_numbers \ (k1_euclid \ X0)))))) \Rightarrow (\forall X2.(v1_xreal_0 \ X2) \Rightarrow (\\ (r1_ndiff_4 \ X0 \ X1 \ X2) \Leftrightarrow (\exists X3.((v1_funct_1 \ X3) \wedge (m1_subset_1 \\ X3 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k1_numbers \ (u1_struct_0 \ (k4_real_ns1 \\ X0)))))) \wedge ((X1 = X3) \wedge (r1_ndiff_3 \ (k4_real_ns1 \ X0) \ X3 \ X2)))))) \quad (9) \end{aligned}$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k4_ordinal1) \Rightarrow (v7_ordinal1 \ X0) \quad (10)$$

Theorem 1

$$\begin{aligned} \forall X0.((\neg v1_xboole_0 \ X0) \wedge (m2_subset_1 \ X0 \ k1_numbers \ k5_numbers)) \Rightarrow \\ (\forall X1.((v1_funct_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ k1_numbers \ (k1_euclid \ X0)))))) \Rightarrow (\forall X2.(v1_xreal_0 \ X2) \Rightarrow (\\ (r1_ndiff_4 \ X0 \ X1 \ X2) \Leftrightarrow (\forall X3.(m2_subset_1 \ X3 \ k1_numbers \ k5_numbers) \Rightarrow \\ (((r1_xxreal_0 \ np_1 \ X3) \wedge (r1_xxreal_0 \ X3 \ X0)) \Rightarrow (r1_ndiff_3 \ (k4_real_ns1 \\ np_1) \ (k1_partfun1 \ k1_numbers \ (k1_euclid \ X0) \ (u1_struct_0 \ (k4_real_ns1 \\ X0)) \ (u1_struct_0 \ (k4_real_ns1 \ np_1)) \ X1 \ (k4_pdiff_1 \ X3 \ X0)) \ X2)))))) \end{aligned}$$