

t20_toprns_1

(TMaV9FtcX6Jsi4JHMsNjkt7WU2v4X1FoFZC)

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Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k15_euclid : \iota \Rightarrow \iota$ 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 $k1_toprns_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_toprns_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k3_toprns_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\
 & ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers (u1_struct_0 (k15_euclid \\
 & X0))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (\\
 & u1_struct_0 (k15_euclid X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 \\
 & X2) \wedge ((v1_funct_2 X2 k5_numbers (u1_struct_0 (k15_euclid X0))) \wedge \\
 & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\
 & (k15_euclid X0)))))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 \\
 & X3 k5_numbers (u1_struct_0 (k15_euclid X0))) \wedge (m1_subset_1 X3 \\
 & (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 (k15_euclid \\
 & X0)))))) \Rightarrow (k1_toprns_1 X0 (k1_toprns_1 X0 X1 X2) X3 = k1_toprns_1 \\
 & X0 X1 (k1_toprns_1 X0 X2 X3))))))
 \end{aligned} \tag{1}$$

Assume the following.

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

Assume the following.

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

Assume the following.

$$(\neg v1_xboole_0 k4_ordinal1) \wedge (v3_ordinal1 k4_ordinal1) \tag{4}$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v7_ordinal1 \ X0) \wedge ((v1_funct_1 \ X1) \wedge ((\\ & v1_funct_2 \ X1 \ k5_numbers \ (u1_struct_0 \ (k15_euclid \ X0))) \wedge (m1_subset_1 \\ & X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (u1_struct_0 \ (k15_euclid \\ & X0)))))) \Rightarrow ((v1_funct_1 \ (k3_toprns_1 \ X0 \ X1)) \wedge ((v1_funct_2 \ (\\ & k3_toprns_1 \ X0 \ X1) \ k5_numbers \ (u1_struct_0 \ (k15_euclid \ X0))) \wedge \\ & (m1_subset_1 \ (k3_toprns_1 \ X0 \ X1) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \\ & (u1_struct_0 \ (k15_euclid \ X0)))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v7_ordinal1 \ X0) \wedge ((v1_funct_1 \\ & X1) \wedge ((v1_funct_2 \ X1 \ k5_numbers \ (u1_struct_0 \ (k15_euclid \ X0))) \wedge \\ & (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (u1_struct_0 \\ & (k15_euclid \ X0)))))) \wedge ((v1_funct_1 \ X2) \wedge ((v1_funct_2 \ X2 \ k5_numbers \\ & (u1_struct_0 \ (k15_euclid \ X0))) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ k5_numbers \ (u1_struct_0 \ (k15_euclid \ X0)))))) \Rightarrow \\ & ((v1_funct_1 \ (k1_toprns_1 \ X0 \ X1 \ X2)) \wedge ((v1_funct_2 \ (k1_toprns_1 \\ & X0 \ X1 \ X2) \ k5_numbers \ (u1_struct_0 \ (k15_euclid \ X0))) \wedge (m1_subset_1 \\ & (k1_toprns_1 \ X0 \ X1 \ X2) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (u1_struct_0 \\ & (k15_euclid \ X0)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v7_ordinal1 \ X0) \Rightarrow (\forall X1. ((v1_funct_1 \ X1) \wedge ((\\ & v1_funct_2 \ X1 \ k5_numbers \ (u1_struct_0 \ (k15_euclid \ X0))) \wedge (m1_subset_1 \\ & X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ k5_numbers \ (u1_struct_0 \ (k15_euclid \\ & X0)))))) \Rightarrow (\forall X2. ((v1_funct_1 \ X2) \wedge ((v1_funct_2 \ X2 \ k5_numbers \\ & (u1_struct_0 \ (k15_euclid \ X0))) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ k5_numbers \ (u1_struct_0 \ (k15_euclid \ X0)))))) \Rightarrow \\ & (k4_toprns_1 \ X0 \ X1 \ X2 = k1_toprns_1 \ X0 \ X1 \ (k3_toprns_1 \ X0 \ X2))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. (m1_subset_1 \ X0 \ k4_ordinal1) \Rightarrow (v7_ordinal1 \ X0) \quad (9)$$

Assume the following.

$$\forall X0. (v1_xboole_0 \ X0) \Rightarrow (\forall X1. (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ X0)) \Rightarrow (v1_xboole_0 \ X1)) \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers (u1_struct_0 (k15_euclid \\ & X0))) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (\\ & u1_struct_0 (k15_euclid X0))))))) \Rightarrow (\forall X2. ((v1_funct_1 \\ & X2) \wedge ((v1_funct_2 X2 k5_numbers (u1_struct_0 (k15_euclid X0))) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 \\ & (k15_euclid X0))))))) \Rightarrow (\forall X3. ((v1_funct_1 X3) \wedge ((v1_funct_2 \\ & X3 k5_numbers (u1_struct_0 (k15_euclid X0))) \wedge (m1_subset_1 X3 \\ & (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers (u1_struct_0 (k15_euclid \\ & X0))))))) \Rightarrow (k1_toprns_1 X0 X1 (k4_toprns_1 X0 X2 X3) = k4_toprns_1 \\ & X0 (k1_toprns_1 X0 X1 X2) X3))) \end{aligned}$$