

t8_topreal5
(TMSM4D8QhqxaEpR79ABj9gjteNbxC5Nc5sG)

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Let $v1_xreal_0 : \iota \Rightarrow o$ 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 $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_topmetr : \iota$ be given. Let $v5_pre_topc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ 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 $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\
& (v1_xreal_0 X2) \Rightarrow (\forall X3.(v1_xreal_0 X3) \Rightarrow ((\neg r1_xxreal_0 \\
& X1 X0) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 \\
& (k4_topmetr X0 X1)) (u1_struct_0 k3_topmetr)) \wedge ((v5_pre_topc \\
& X4 (k4_topmetr X0 X1) k3_topmetr) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 (k4_topmetr X0 X1)) (u1_struct_0 k3_topmetr)))))) \Rightarrow \\
& (\forall X5.(v1_xreal_0 X5) \Rightarrow (\neg (k1_funct_1 X4 X0 = X2) \wedge ((k1_funct_1 \\
& X4 X1 = X3) \wedge ((\neg r1_xxreal_0 X2 X5) \wedge ((\neg r1_xxreal_0 X5 X3) \wedge (\forall X6. \\
& (m1_subset_1 X6 k1_numbers) \Rightarrow (\neg (k1_funct_1 X4 X6 = X5) \wedge ((\neg r1_xxreal_0 \\
& X6 X0) \wedge (\neg r1_xxreal_0 X1 X6))))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\
& (v1_xreal_0 X2) \Rightarrow (\forall X3.(v1_xreal_0 X3) \Rightarrow ((\neg r1_xxreal_0 \\
& X1 X0) \Rightarrow (\forall X4.((v1_funct_1 X4) \wedge ((v1_funct_2 X4 (u1_struct_0 \\
& (k4_topmetr X0 X1)) (u1_struct_0 k3_topmetr)) \wedge ((v5_pre_topc \\
& X4 (k4_topmetr X0 X1) k3_topmetr) \wedge (m1_subset_1 X4 (k1_zfmisc_1 \\
& (k2_zfmisc_1 (u1_struct_0 (k4_topmetr X0 X1)) (u1_struct_0 k3_topmetr)))))) \Rightarrow \\
& (\forall X5.(v1_xreal_0 X5) \Rightarrow (\neg (k1_funct_1 X4 X0 = X2) \wedge ((k1_funct_1 \\
& X4 X1 = X3) \wedge ((\neg r1_xxreal_0 X5 X2) \wedge ((\neg r1_xxreal_0 X3 X5) \wedge (\forall X6. \\
& (m1_subset_1 X6 k1_numbers) \Rightarrow (\neg (k1_funct_1 X4 X6 = X5) \wedge ((\neg r1_xxreal_0 \\
& X6 X0) \wedge (\neg r1_xxreal_0 X1 X6))))))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$m1_subset_1 \ k1_xboole_0 \ k4_ordinal1 \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 \ X0) \Rightarrow (\forall X1.(v1_xreal_0 \ X1) \Rightarrow (\neg(\neg \\ r1_xxreal_0 \ k6_numbers \ (k3_xcmplx_0 \ X0 \ X1)) \wedge ((\neg(\neg r1_xxreal_0 \\ X0 \ k6_numbers) \wedge (\neg r1_xxreal_0 \ k6_numbers \ X1)) \wedge (\neg(\neg r1_xxreal_0 \\ k6_numbers \ X0) \wedge (\neg r1_xxreal_0 \ X1 \ k6_numbers)))))) \end{aligned} \quad (4)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (5)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (6)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (7)$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ (k1_zfmisc_1 \ k1_numbers)) \Rightarrow (v3_membered \ X0) \quad (8)$$

Assume the following.

$$\forall X0.(v3_membered \ X0) \Rightarrow (\forall X1.(m1_subset_1 \ X1 \ X0) \Rightarrow (v1_xreal_0 \ X1)) \quad (9)$$

Theorem 1

$$\begin{aligned} \forall X0.(v1_xreal_0 \ X0) \Rightarrow (\forall X1.(v1_xreal_0 \ X1) \Rightarrow (\forall X2. \\ ((v1_funct_1 \ X2) \wedge ((v1_funct_2 \ X2 \ (u1_struct_0 \ (k4_topmetr \ X0 \\ X1)) \ (u1_struct_0 \ k3_topmetr)) \wedge ((v5_pre_topc \ X2 \ (k4_topmetr \\ X0 \ X1) \ k3_topmetr) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ (u1_struct_0 \ (k4_topmetr \ X0 \ X1)) \ (u1_struct_0 \ k3_topmetr)))))) \Rightarrow \\ (\forall X3.(v1_xreal_0 \ X3) \Rightarrow (\forall X4.(v1_xreal_0 \ X4) \Rightarrow (\neg(\\ \neg r1_xxreal_0 \ X1 \ X0) \wedge ((\neg r1_xxreal_0 \ k6_numbers \ (k3_xcmplx_0 \ X3 \\ X4)) \wedge ((X3 = k1_funct_1 \ X2 \ X0) \wedge ((X4 = k1_funct_1 \ X2 \ X1) \wedge (\forall X5. \\ (m1_subset_1 \ X5 \ k1_numbers) \Rightarrow (\neg(k1_funct_1 \ X2 \ X5 = k6_numbers) \wedge \\ ((\neg r1_xxreal_0 \ X5 \ X0) \wedge (\neg r1_xxreal_0 \ X1 \ X5))))))))))))) \end{aligned}$$