

t5_metric_6
(TMbjAH7F2SrFFtLuW83eckXuY55aECsj1Ut)

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Let $v1_xboole_0 : \iota \Rightarrow o$ 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 $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $r1_pcomps_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_metric_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v3_metric_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_metric_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v4_metric_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v5_metric_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) k1_numbers) \wedge (m1_subset_1 X1 \\ (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) k1_numbers)))))) \Rightarrow \\ ((r1_pcomps_1 X0 X1) \Leftrightarrow ((v2_metric_1 X1 X0) \wedge ((v3_metric_1 X1 X0) \wedge \\ ((v4_metric_1 X1 X0) \wedge (v5_metric_1 X1 X0)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow ((\\ (r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X0)) \Rightarrow (X0 = X1))) \quad (2)$$

Assume the following.

$$\forall X0. (v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 k6_numbers = X0) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 \\ X1)) \Rightarrow (k7_real_1 X0 X1 = k2_xcmplx_0 X0 X1) \quad (4)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (5)$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (6)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1_xboole_0 \ X0) \wedge ((\neg v1_xboole_0 \ X1) \wedge \\ & (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ X0)))) \Rightarrow (\forall X2. (m2_subset_1 \\ & \quad X2 \ X0 \ X1) \Rightarrow (m1_subset_1 \ X2 \ X0)) \end{aligned} \quad (8)$$

Assume the following.

$$m2_subset_1 \ k6_numbers \ k1_numbers \ k5_numbers \quad (9)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((v1_funct_1 \\ & \quad X2) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \ (k2_zfmisc_1 \ X0 \\ & \quad X1) \ k1_numbers)))) \wedge ((m1_subset_1 \ X3 \ X0) \wedge (m1_subset_1 \ X4 \ X1))) \Rightarrow \\ & \quad (m1_subset_1 \ (k1_metric_1 \ X0 \ X1 \ X2 \ X3 \ X4) \ k1_numbers) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 \ X1) \wedge ((v1_funct_2 \ X1 \ (k2_zfmisc_1 \\ & \quad X0 \ X0) \ k1_numbers) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & \quad (k2_zfmisc_1 \ X0 \ X0) \ k1_numbers)))))) \Rightarrow ((r1_pcomps_1 \ X0 \ X1) \Leftrightarrow (\forall X2. \\ & \quad (m1_subset_1 \ X2 \ X0) \Rightarrow (\forall X3. (m1_subset_1 \ X3 \ X0) \Rightarrow (\forall X4. \\ & \quad (m1_subset_1 \ X4 \ X0) \Rightarrow (((k1_metric_1 \ X0 \ X0 \ X1 \ X2 \ X3 = k6_numbers) \Rightarrow \\ & \quad (X2 = X3)) \wedge (((X2 = X3) \Rightarrow (k1_metric_1 \ X0 \ X0 \ X1 \ X2 \ X3 = k6_numbers)) \wedge \\ & \quad ((k1_metric_1 \ X0 \ X0 \ X1 \ X2 \ X3 = k1_metric_1 \ X0 \ X0 \ X1 \ X3 \ X2) \wedge (r1_xxreal_0 \\ & \quad (k1_metric_1 \ X0 \ X0 \ X1 \ X2 \ X4) \ (k7_real_1 \ (k1_metric_1 \ X0 \ X0 \ X1 \ X2 \ X3) \\ & \quad (k1_metric_1 \ X0 \ X0 \ X1 \ X3 \ X4)))))))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 \ X1) \wedge (m1_subset_1 \ X1 \ (k1_zfmisc_1 \\ & \quad (k2_zfmisc_1 \ (k2_zfmisc_1 \ X0 \ X0) \ k1_numbers)))) \Rightarrow ((v5_metric_1 \\ & \quad X1 \ X0) \Leftrightarrow (\forall X2. (m1_subset_1 \ X2 \ X0) \Rightarrow (\forall X3. (m1_subset_1 \\ & \quad X3 \ X0) \Rightarrow (\forall X4. (m1_subset_1 \ X4 \ X0) \Rightarrow (r1_xxreal_0 \ (k1_metric_1 \\ & \quad X0 \ X0 \ X1 \ X2 \ X4) \ (k7_real_1 \ (k1_metric_1 \ X0 \ X0 \ X1 \ X2 \ X3) \ (k1_metric_1 \\ & \quad X0 \ X0 \ X1 \ X3 \ X4))))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) k1_numbers)))) \Rightarrow ((v4_metric_1 \\ & X1 X0) \Leftrightarrow (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (\forall X3. (m1_subset_1 \\ & X3 X0) \Rightarrow (k1_metric_1 X0 X0 X1 X2 X3 = k1_metric_1 X0 X0 X1 X3 X2)))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 \\ & (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) k1_numbers)))) \Rightarrow ((v2_metric_1 \\ & X1 X0) \Leftrightarrow (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (k1_metric_1 X0 X0 X1 X2 \\ & X2 = k6_numbers))) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0. (v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (16)$$

Assume the following.

$$\forall X0. (v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (17)$$

Assume the following.

$$\forall X0. (m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (18)$$

Theorem 1

$$\begin{aligned} & \forall X0. (\neg v1_xboole_0 X0) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge (\\ & (v1_funct_2 X1 (k2_zfmisc_1 X0 X0) k1_numbers) \wedge (m1_subset_1 X1 \\ & (k1_zfmisc_1 (k2_zfmisc_1 (k2_zfmisc_1 X0 X0) k1_numbers)))))) \Rightarrow \\ & ((r1_pcomps_1 X0 X1) \Leftrightarrow ((v2_metric_1 X1 X0) \wedge ((v3_metric_1 X1 X0) \wedge \\ & (\forall X2. (m1_subset_1 X2 X0) \Rightarrow (\forall X3. (m1_subset_1 X3 X0) \Rightarrow \\ & (\forall X4. (m1_subset_1 X4 X0) \Rightarrow (r1_xxreal_0 (k1_metric_1 X0 \\ & X0 X1 X3 X4) (k7_real_1 (k1_metric_1 X0 X0 X1 X2 X3) (k1_metric_1 X0 \\ & X0 X1 X2 X4)))))))))) \end{aligned}$$