

t10_integra8 (TMYZKm- tooo89kLG6p5EwZMycMn9RJTfHx7f)

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Let $k3_sin_cos6 : \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_square_1 : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k32_sin_cos : \iota$ be given. Let $np_4 : \iota$ be given. Let $k18_sin_cos : \iota \Rightarrow \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k3_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_sin_cos : \iota \Rightarrow \iota$ be given. Let $k21_sin_cos : \iota \Rightarrow \iota$ be given. Let $k20_sin_cos : \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_sin_cos : \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k16_sin_cos : \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $k4_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_sin_cos9 : \iota \Rightarrow \iota$ be given. Let $k1_sin_cos9 : \iota$ be given. Let $k1_fdiff_9 : \iota$ be given. Let $np_3 : \iota$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ 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 $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np_0 : \iota$ be given. Let $k2_sin_cos6 : \iota \Rightarrow \iota$ be given. Let $k3_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_sin_cos6 : \iota$ be given. Let $v2_membered : \iota \Rightarrow o$ be given. Assume the following.

$$k18_sin_cos (k1_real_1 (k10_real_1 k32_sin_cos np_4)) = k1_real_1 (k10_real_1 (k7_square_1 np_2) np_2) \quad (1)$$

Assume the following.

$$k18_sin_cos (k10_real_1 k32_sin_cos np_4) = k10_real_1 (k7_square_1 np_2) np_2 \quad (2)$$

Assume the following.

$$\begin{aligned}
\forall X0.(v1_xreal_0 X0) \Rightarrow & ((k18_sin_cos (k3_real_1 X0 (k8_real_1 \\
& np_2 k32_sin_cos)) = k17_sin_cos X0) \wedge ((k21_sin_cos (k3_real_1 \\
& X0 (k8_real_1 np_2 k32_sin_cos)) = k20_sin_cos X0) \wedge ((k18_sin_cos \\
& (k9_real_1 (k10_real_1 k32_sin_cos np_2) X0) = k20_sin_cos X0) \wedge \\
& ((k21_sin_cos (k9_real_1 (k10_real_1 k32_sin_cos np_2) X0) = \\
& k17_sin_cos X0) \wedge ((k18_sin_cos (k7_real_1 (k10_real_1 k32_sin_cos \\
& np_2) X0) = k20_sin_cos X0) \wedge ((k21_sin_cos (k7_real_1 (k10_real_1 \\
& k32_sin_cos np_2) X0) = k4_xcmplx_0 (k17_sin_cos X0)) \wedge ((k18_sin_cos \\
& (k7_real_1 k32_sin_cos X0) = k4_xcmplx_0 (k17_sin_cos X0)) \wedge (k21_sin_cos \\
& (k7_real_1 k32_sin_cos X0) = k4_xcmplx_0 (k20_sin_cos X0)))))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& (k1_seq_1 k19_sin_cos (k10_real_1 k32_sin_cos np_2) = k6_numbers) \wedge \\
& ((k1_seq_1 k16_sin_cos (k10_real_1 k32_sin_cos np_2) = np_1) \wedge \\
& ((k1_seq_1 k19_sin_cos k32_sin_cos = k1_real_1 np_1) \wedge ((k1_seq_1 \\
& k16_sin_cos k32_sin_cos = k6_numbers) \wedge ((k1_seq_1 k19_sin_cos \\
& (k7_real_1 k32_sin_cos (k10_real_1 k32_sin_cos np_2)) = k6_numbers) \wedge \\
& ((k1_seq_1 k16_sin_cos (k7_real_1 k32_sin_cos (k10_real_1 k32_sin_cos \\
& np_2)) = k1_real_1 np_1) \wedge ((k1_seq_1 k19_sin_cos (k8_real_1 \\
& np_2 k32_sin_cos) = np_1) \wedge (k1_seq_1 k16_sin_cos (k8_real_1 \\
& np_2 k32_sin_cos) = k6_numbers)))))))))
\end{aligned} \tag{4}$$

Assume the following.

$$k3_sin_cos6 np_1 = k10_real_1 k32_sin_cos np_2 \tag{5}$$

Assume the following.

$$k3_sin_cos6 (k1_real_1 np_1) = k1_real_1 (k10_real_1 k32_sin_cos np_2) \tag{6}$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \tag{7}$$

Assume the following.

$$\begin{aligned}
\forall X0.(v1_xxreal_0 X0) \Rightarrow & (((r1_xxreal_0 (k1_real_1 (k10_real_1 \\
& k32_sin_cos np_2)) X0) \wedge (r1_xxreal_0 X0 (k10_real_1 k32_sin_cos \\
& np_2))) \Rightarrow (k3_sin_cos6 (k17_sin_cos X0) = X0))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
\forall X0.(v1_xxreal_0 X0) \Rightarrow & (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\
& (v1_xxreal_0 X2) \Rightarrow ((X0 \in k4_xxreal_1 X1 X2) \Leftrightarrow ((\neg r1_xxreal_0 X0 X1) \wedge \\
& (\neg r1_xxreal_0 X2 X0))))))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow ((X0 \in k2_xreal_1 X1 X2) \Leftrightarrow ((r1_xreal_0 X1 X0) \wedge \\ & (\neg r1_xreal_0 X2 X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & (k5_sin_cos9 \ np_1 = k10_real_1 \ k32_sin_cos \ np_4) \wedge (k1_seq_1 \\ & \ k1_sin_cos9 \ np_1 = k10_real_1 \ k32_sin_cos \ np_4) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & (k5_sin_cos9 \ (k1_real_1 \ np_1) = k1_real_1 \ (k10_real_1 \ k32_sin_cos \\ & \ np_4)) \wedge (k1_seq_1 \ k1_sin_cos9 \ (k1_real_1 \ np_1) = k1_real_1 \ (\\ & \ k10_real_1 \ k32_sin_cos \ np_4)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & (k1_seq_1 \ k1_fdiff_9 \ k6_numbers = np_1) \wedge ((k1_seq_1 \ k1_fdiff_9 \\ & \ (k10_real_1 \ k32_sin_cos \ np_4) = k7_square_1 \ np_2) \wedge ((k1_seq_1 \\ & \ k1_fdiff_9 \ (k8_real_1 \ (k10_real_1 \ np_3 \ np_4) \ k32_sin_cos) = \\ & \ k1_real_1 \ (k7_square_1 \ np_2)) \wedge (k1_seq_1 \ k1_fdiff_9 \ k32_sin_cos = \\ & \ k1_real_1 \ np_1))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow ((k21_sin_cos \ k6_numbers = np_1) \wedge \\ & ((k18_sin_cos \ k6_numbers = k6_numbers) \wedge ((k20_sin_cos \ (k4_xcmplx_0 \\ & \ X0) = k20_sin_cos \ X0) \wedge (k17_sin_cos \ (k4_xcmplx_0 \ X0) = k4_xcmplx_0 \\ & \ (k17_sin_cos \ X0)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\begin{aligned} & ((v2_xreal_0 \ np_1) \wedge (m2_subset_1 \ np_1 \ k1_numbers \ k5_numbers)) \wedge \\ & ((m1_subset_1 \ np_1 \ k5_numbers) \wedge (m1_subset_1 \ np_1 \ k1_numbers)) \end{aligned} \quad (15)$$

Assume the following.

$$\begin{aligned} & (m2_subset_1 \ np_0 \ k1_numbers \ k5_numbers) \wedge ((m1_subset_1 \ np_0 \\ & \ k5_numbers) \wedge (m1_subset_1 \ np_0 \ k1_numbers)) \end{aligned} \quad (16)$$

Assume the following.

$$v1_xboole_0 \ np_0 \quad (17)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (18)$$

Assume the following.

$$\forall X0. k3_sin_cos6\ X0 = k2_sin_cos6\ X0 \quad (19)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xreal_0\ X0) \wedge (v1_xxreal_0\ X1)) \Rightarrow (k3_rcomp_1\ X0\ X1 = k2_xxreal_1\ X0\ X1) \quad (20)$$

Assume the following.

$$\forall X0. \forall X1. ((v1_xxreal_0\ X0) \wedge (v1_xxreal_0\ X1)) \Rightarrow (k2_rcomp_1\ X0\ X1 = k4_xxreal_1\ X0\ X1) \quad (21)$$

Assume the following.

$$\forall X0. (m1_subset_1\ X0\ k1_numbers) \Rightarrow (k1_real_1\ X0 = k4_xcmplx_0\ X0) \quad (22)$$

Assume the following.

$$\forall X0. (m1_subset_1\ X0\ k1_numbers) \Rightarrow (k18_sin_cos\ X0 = k17_sin_cos\ X0) \quad (23)$$

Assume the following.

$$k10_real_1\ k32_sin_cos\ np_4 \in k2_rcomp_1\ (k1_real_1\ (k10_real_1\ k32_sin_cos\ np_2))\ (k10_real_1\ k32_sin_cos\ np_2) \quad (24)$$

Assume the following.

$$(k6_numbers \in k3_rcomp_1\ k6_numbers\ (k10_real_1\ k32_sin_cos\ np_2)) \wedge (k10_real_1\ k32_sin_cos\ np_4 \in k3_rcomp_1\ k6_numbers\ (k10_real_1\ k32_sin_cos\ np_2)) \quad (25)$$

Assume the following.

$$\forall X0. (v1_xcmplx_0\ X0) \Rightarrow (k4_xcmplx_0\ (k4_xcmplx_0\ X0) = X0) \quad (26)$$

Assume the following.

$$\forall X0. (m1_subset_1\ X0\ k1_numbers) \Rightarrow (k1_real_1\ (k1_real_1\ X0) = X0) \quad (27)$$

Assume the following.

$$\forall X0. (v1_xreal_0\ X0) \Rightarrow ((v1_xcmplx_0\ (k4_xcmplx_0\ X0)) \wedge (v1_xreal_0\ (k4_xcmplx_0\ X0))) \quad (28)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (29)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (m1_subset_1 (k5_sin_cos9 X0) k1_numbers) \quad (30)$$

Assume the following.

$$\forall X0.m1_subset_1 (k3_sin_cos6 X0) k1_numbers \quad (31)$$

Assume the following.

$$(v1_funct_1 k1_sin_cos9) \wedge (m1_subset_1 k1_sin_cos9 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))) \quad (32)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 X0) \wedge ((v1_funct_1 X0) \wedge (v3_valued_0 X0))) \Rightarrow (m1_subset_1 (k1_seq_1 X0 X1) k1_numbers) \quad (33)$$

Assume the following.

$$\forall X0.k2_sin_cos6 X0 = k1_seq_1 k1_sin_cos6 X0 \quad (34)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xxreal_0 X0) \wedge (v1_xxreal_0 X1)) \Rightarrow (r1_xxreal_0 X0 X1) \vee (r1_xxreal_0 X1 X0) \quad (35)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (36)$$

Assume the following.

$$\forall X0.(v3_membered X0) \Rightarrow (v2_membered X0) \quad (37)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (38)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xcmplx_0 X0) \quad (39)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v1_relat_1 X2) \quad (40)$$

Assume the following.

$$\forall X0.\forall X1.(v3_membered X1) \Rightarrow (\forall X2.(m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1))) \Rightarrow (v3_valued_0 X2)) \quad (41)$$

Assume the following.

$$\forall X0.(v3_membered\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ X0) \Rightarrow (v1_xreal_0\ X1)) \quad (42)$$

Assume the following.

$$\forall X0.(v2_membered\ X0) \Rightarrow (\forall X1.(m1_subset_1\ X1\ X0) \Rightarrow (v1_xxreal_0\ X1)) \quad (43)$$

Theorem 1

$$k3_sin_cos6\ (k10_real_1\ (k7_square_1\ np_2)\ np_2) = k10_real_1\ k32_sin_cos\ np_4$$