

t88_quatern3
(TMYJ7Hw3tZTZTQinU98WrPB2dt8JtPK5Kxt)

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Let $k4_quatern3 : \iota \Rightarrow \iota$ be given. Let $k28_quaterni : \iota \Rightarrow \iota$ be given. Let $k2_quatern2 : \iota$ be given. Let $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k6_quaterni : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k5_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_quatern3 : \iota \Rightarrow \iota$ be given. Let $v1_quaterni : \iota \Rightarrow o$ be given. Let $k1_quatern3 : \iota \Rightarrow \iota$ be given. Let $k21_sin_cos : \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k32_sin_cos : \iota$ be given. Let $np_2 : \iota$ be given. Let $k18_sin_cos : \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k17_quaterni : \iota \Rightarrow \iota$ be given. Let $k18_quaterni : \iota \Rightarrow \iota$ be given. Let $k19_quaterni : \iota \Rightarrow \iota$ be given. Let $k20_quaterni : \iota \Rightarrow \iota$ be given. Let $k31_quaterni : \iota \Rightarrow \iota$ be given. Let $k1_xcmplx_0 : \iota$ be given. Let $k22_quaterni : \iota$ be given. Let $k27_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_quaterni : \iota$ be given. Let $k3_quatern3 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $k5_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & X1 k1_numbers) \Rightarrow (k6_quaterni X0 X1 k6_numbers k6_numbers = k5_arytm_0 \\ & X0 X1)) \end{aligned} \tag{1}$$

Assume the following.

$$k2_quatern3 (k28_quaterni k2_quatern2) = np_1 \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_quaterni X0) \Rightarrow (k1_quatern3 X0 = k2_quatern3 (k28_quaterni \\ & X0)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& (k21_sin_cos (k10_real_1 k32_sin_cos np_2) = k6_numbers) \wedge ((\\
& k18_sin_cos (k10_real_1 k32_sin_cos np_2) = np_1) \wedge ((k21_sin_cos \\
& k32_sin_cos = k1_real_1 np_1) \wedge ((k18_sin_cos k32_sin_cos = k6_numbers) \wedge \\
& ((k21_sin_cos (k7_real_1 k32_sin_cos (k10_real_1 k32_sin_cos \\
& np_2)) = k6_numbers) \wedge ((k18_sin_cos (k7_real_1 k32_sin_cos (\\
& k10_real_1 k32_sin_cos np_2)) = k1_real_1 np_1) \wedge ((k21_sin_cos \\
& (k8_real_1 np_2 k32_sin_cos) = np_1) \wedge (k18_sin_cos (k8_real_1 \\
& np_2 k32_sin_cos) = k6_numbers))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
\forall X0. (v1_quaterni X0) \Rightarrow (k28_quaterni X0 = k6_quaterni (k1_real_1 \\
(k17_quaterni X0)) (k1_real_1 (k18_quaterni X0)) (k1_real_1 (\\
k19_quaterni X0)) (k1_real_1 (k20_quaterni X0)))
\end{aligned} \tag{5}$$

Assume the following.

$$k31_quaterni k1_xcmplx_0 = k28_quaterni k1_xcmplx_0 \tag{6}$$

Assume the following.

$$\begin{aligned}
\forall X0. (v1_quaterni X0) \Rightarrow ((k17_quaterni (k31_quaterni X0) = \\
k17_quaterni X0) \wedge ((k18_quaterni (k31_quaterni X0) = k1_real_1 \\
(k18_quaterni X0)) \wedge ((k19_quaterni (k31_quaterni X0) = k1_real_1 \\
(k19_quaterni X0)) \wedge (k20_quaterni (k31_quaterni X0) = k1_real_1 \\
(k20_quaterni X0))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned}
\forall X0. (v1_quaterni X0) \Rightarrow ((k17_quaterni (k28_quaterni X0) = \\
k1_real_1 (k17_quaterni X0)) \wedge ((k18_quaterni (k28_quaterni X0) = \\
k1_real_1 (k18_quaterni X0)) \wedge ((k19_quaterni (k28_quaterni X0) = \\
k1_real_1 (k19_quaterni X0)) \wedge (k20_quaterni (k28_quaterni X0) = \\
k1_real_1 (k20_quaterni X0))))))
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned}
(k17_quaterni k1_xcmplx_0 = k6_numbers) \wedge ((k18_quaterni k1_xcmplx_0 = \\
np_1) \wedge ((k19_quaterni k1_xcmplx_0 = k6_numbers) \wedge (k20_quaterni \\
k1_xcmplx_0 = k6_numbers)))
\end{aligned} \tag{9}$$

Assume the following.

$$\begin{aligned}
(k17_quaterni k22_quaterni = np_1) \wedge ((k18_quaterni k22_quaterni = \\
k6_numbers) \wedge ((k19_quaterni k22_quaterni = k6_numbers) \wedge (k20_quaterni \\
k22_quaterni = k6_numbers)))
\end{aligned} \tag{10}$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (\forall X1.(v1_quaterni X1) \Rightarrow (k27_quaterni (k28_quaterni X0) (k28_quaterni X1) = k27_quaterni X0 X1)) \quad (11)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (k28_quaterni X0 = k27_quaterni (k28_quaterni k2_quatern2) X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (k27_quaterni k2_quatern2 X0 = X0) \quad (13)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (14)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_quaterni) \Rightarrow (k4_quatern3 X0 = k3_quatern3 X0) \quad (15)$$

Assume the following.

$$k2_quatern2 = k22_quaterni \quad (16)$$

Assume the following.

$$v1_quaterni k1_xcmplx_0 \quad (17)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (18)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v1_xreal_0 X0) \wedge ((v1_xreal_0 X1) \wedge ((v1_xreal_0 X2) \wedge (v1_xreal_0 X3)))) \Rightarrow (m1_subset_1 (k6_quaterni X0 X1 X2 X3) k1_quaterni) \quad (19)$$

Assume the following.

$$m1_subset_1 k32_sin_cos k1_numbers \quad (20)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (m1_subset_1 (k28_quaterni X0) k1_quaterni) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.((v1_quaterni X0) \wedge (v1_quaterni X1)) \Rightarrow (m1_subset_1 (k27_quaterni X0 X1) k1_quaterni) \quad (22)$$

Assume the following.

$$v1_quaterni \ k22_quaterni \quad (23)$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (m1_subset_1 \ (k21_sin_cos \ X0) \ k1_numbers) \quad (24)$$

Assume the following.

$$\forall X0.(v1_quaterni \ X0) \Rightarrow (m1_subset_1 \ (k18_quaterni \ X0) \ k1_numbers) \quad (25)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ & \ X1 \ k1_numbers) \Rightarrow (((X1 = k6_numbers) \Rightarrow (k5_arytm_0 \ X0 \ X1 = X0)) \wedge ((\\ & \ X1 \neq k6_numbers) \Rightarrow (k5_arytm_0 \ X0 \ X1 = k5_funct_4 \ k1_numbers \ k6_numbers \\ & \ np_1 \ X0 \ X1)))) \end{aligned} \quad (26)$$

Assume the following.

$$\forall X0.(v1_quaterni \ X0) \Rightarrow (k3_quatern3 \ X0 = k27_quaterni \ (k27_quaterni \ X0 \ X0) \ X0) \quad (27)$$

Assume the following.

$$\forall X0.(v1_quaterni \ X0) \Rightarrow (k1_quatern3 \ X0 = k27_quaterni \ X0 \ X0) \quad (28)$$

Assume the following.

$$k22_quaterni = np_1 \quad (29)$$

Assume the following.

$$\forall X0.(v1_xboole_0 \ X0) \Rightarrow (v7_ordinal1 \ X0) \quad (30)$$

Assume the following.

$$\forall X0.(v7_ordinal1 \ X0) \Rightarrow (v1_xreal_0 \ X0) \quad (31)$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k1_numbers) \Rightarrow (v1_xreal_0 \ X0) \quad (32)$$

Assume the following.

$$\forall X0.(m1_subset_1 \ X0 \ k1_quaterni) \Rightarrow (v1_quaterni \ X0) \quad (33)$$

Theorem 1 $k4_quatern3 \ (k28_quaterni \ k2_quatern2) = k1_real_1 \ np_1$.