

t86_quatern3 (TMYnGkDEn- zdF8MD2FygARMgBrJDyXArMxyz)

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Let $k4_quatern3 : \iota \Rightarrow \iota$ be given. Let $k12_quaterni : \iota$ be given. Let $k28_quaterni : \iota \Rightarrow \iota$ be given. Let $k11_quaterni : \iota$ be given. Let $k4_quatern2 : \iota$ be given. Let $v1_quaterni : \iota \Rightarrow o$ be given. Let $k1_quatern3 : \iota \Rightarrow \iota$ be given. Let $k2_quatern3 : \iota \Rightarrow \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k27_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_quaterni : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $k17_quaterni : \iota \Rightarrow \iota$ be given. Let $k8_quatern2 : \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k31_quaterni : \iota \Rightarrow \iota$ be given. Let $k1_xcmplx_0 : \iota$ 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 $k1_real_1 : \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_quatern2 : \iota$ be given. Let $k10_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k5_numbers : \iota$ be given. Let $k7_quatern2 : \iota \Rightarrow \iota$ be given. Let $k1_quaterni : \iota$ be given. Let $k3_quatern3 : \iota \Rightarrow \iota$ be given. Let $k22_quaterni : \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ be given. Let $k5_quaterni : \iota$ be given. Let $k4_quaterni : \iota$ be given. Let $k5_arytm_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xreal_0 : \iota \Rightarrow o$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $k5_funct_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$k4_quatern3 \ k11_quaterni = k28_quaterni \ k11_quaterni \quad (1)$$

Assume the following.

$$k4_quatern3 \ k4_quatern2 = k28_quaterni \ k4_quatern2 \quad (2)$$

Assume the following.

$$\forall X0.(v1_quaterni \ X0) \Rightarrow (k1_quatern3 \ X0 = k2_quatern3 \ (k28_quaterni \ X0)) \quad (3)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0)\Rightarrow((m1_subset_1\ X0\ k1_numbers)\Rightarrow(k27_quaterni\ X0\ k12_quaterni = k6_quaterni\ k6_numbers\ k6_numbers\ k6_numbers\ (k17_quaterni\ X0))) \quad (4)$$

Assume the following.

$$k8_quatern2\ k12_quaterni = k28_quaterni\ k12_quaterni \quad (5)$$

Assume the following.

$$\forall X0.(v1_xboole_0\ X0)\Rightarrow(X0 = k1_xboole_0) \quad (6)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0)\Rightarrow(k31_quaterni\ (k28_quaterni\ X0) = k28_quaterni\ (k31_quaterni\ X0)) \quad (7)$$

Assume the following.

$$k31_quaterni\ k12_quaterni = k28_quaterni\ k12_quaterni \quad (8)$$

Assume the following.

$$k31_quaterni\ k11_quaterni = k28_quaterni\ k11_quaterni \quad (9)$$

Assume the following.

$$k31_quaterni\ k1_xcmplx_0 = k28_quaterni\ k1_xcmplx_0 \quad (10)$$

Assume the following.

$$(k17_quaterni\ (k31_quaterni\ k12_quaterni) = k6_numbers)\wedge((k18_quaterni\ (k31_quaterni\ k12_quaterni) = k6_numbers)\wedge((k19_quaterni\ (k31_quaterni\ k12_quaterni) = k6_numbers)\wedge(k20_quaterni\ (k31_quaterni\ k12_quaterni) = k1_real_1\ np_1))) \quad (11)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0)\Rightarrow(k6_xcmplx_0\ X0\ k6_numbers = X0) \quad (12)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0)\Rightarrow((k17_quaterni\ (k31_quaterni\ X0) = k17_quaterni\ X0)\wedge((k18_quaterni\ (k31_quaterni\ X0) = k1_real_1\ (k18_quaterni\ X0))\wedge((k19_quaterni\ (k31_quaterni\ X0) = k1_real_1\ (k19_quaterni\ X0))\wedge(k20_quaterni\ (k31_quaterni\ X0) = k1_real_1\ (k20_quaterni\ X0)))))) \quad (13)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_quaterni\ X0) \Rightarrow & ((k17_quaterni\ (k28_quaterni\ X0) = \\ & k1_real_1\ (k17_quaterni\ X0)) \wedge ((k18_quaterni\ (k28_quaterni\ X0) = \\ & k1_real_1\ (k18_quaterni\ X0)) \wedge ((k19_quaterni\ (k28_quaterni\ X0) = \\ & k1_real_1\ (k19_quaterni\ X0)) \wedge (k20_quaterni\ (k28_quaterni\ X0) = \\ & k1_real_1\ (k20_quaterni\ X0)))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (k8_quatern2\ (k28_quaterni\ X0) = k28_quaterni\ (k8_quatern2\ X0)) \quad (15)$$

Assume the following.

$$\begin{aligned} (k17_quaterni\ k11_quaterni = k6_numbers) \wedge & ((k18_quaterni\ k11_quaterni = \\ & k6_numbers) \wedge ((k19_quaterni\ k11_quaterni = np_1) \wedge ((k20_quaterni \\ & k11_quaterni = k6_numbers) \wedge ((k17_quaterni\ k12_quaterni = k6_numbers) \wedge \\ & ((k18_quaterni\ k12_quaterni = k6_numbers) \wedge ((k19_quaterni\ k12_quaterni = \\ & k6_numbers) \wedge (k20_quaterni\ k12_quaterni = np_1)))))) \end{aligned} \quad (16)$$

Assume the following.

$$\begin{aligned} (k17_quaterni\ k1_xcmplx_0 = k6_numbers) \wedge & ((k18_quaterni\ k1_xcmplx_0 = \\ & np_1) \wedge ((k19_quaterni\ k1_xcmplx_0 = k6_numbers) \wedge (k20_quaterni \\ & k1_xcmplx_0 = k6_numbers))) \end{aligned} \quad (17)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (X0 = k6_quaterni\ (k17_quaterni\ X0) \quad (k18_quaterni\ X0)\ (k19_quaterni\ X0)\ (k20_quaterni\ X0)) \quad (18)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (\forall X1.(v1_quaterni\ X1) \Rightarrow (k27_quaterni\ (k28_quaterni\ X0)\ (k28_quaterni\ X1) = k27_quaterni\ X0\ X1)) \quad (19)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (\forall X1.(v1_quaterni\ X1) \Rightarrow (k27_quaterni\ X0\ (k28_quaterni\ X1) = k28_quaterni\ (k27_quaterni\ X0\ X1))) \quad (20)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (\forall X1.(v1_quaterni\ X1) \Rightarrow (k27_quaterni\ (k28_quaterni\ X0)\ X1 = k28_quaterni\ (k27_quaterni\ X0\ X1))) \quad (21)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0) \Rightarrow (k2_xcmplx_0\ X0\ k6_numbers = X0) \quad (22)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (k28_quaterni\ X0 = k27_quaterni\ (k28_quaterni\ k2_quatern2)\ X0) \quad (23)$$

Assume the following.

$$k10_quaterni\ k12_quaterni\ k12_quaterni = k1_real_1\ np_1 \quad (24)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (k27_quaterni\ k2_quatern2\ X0 = X0) \quad (25)$$

Assume the following.

$$\begin{aligned} & ((v2_xxreal_0\ np_1) \wedge (m2_subset_1\ np_1\ k1_numbers\ k5_numbers)) \wedge \\ & ((m1_subset_1\ np_1\ k5_numbers) \wedge (m1_subset_1\ np_1\ k1_numbers)) \end{aligned} \quad (26)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0) \Rightarrow (k8_quatern2\ X0 = k7_quatern2\ X0) \quad (27)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (28)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_quaterni) \Rightarrow (k4_quatern3\ X0 = k3_quatern3\ X0) \quad (29)$$

Assume the following.

$$k4_quatern2 = k1_xcmplx_0 \quad (30)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_quaterni) \Rightarrow (k2_quatern3\ X0 = k1_quatern3\ X0) \quad (31)$$

Assume the following.

$$k2_quatern2 = k22_quaterni \quad (32)$$

Assume the following.

$$\forall X0.\forall X1.((v1_quaterni\ X0) \wedge (v1_quaterni\ X1)) \Rightarrow (k27_quaterni\ X0\ X1 = k10_quaterni\ X0\ X1) \quad (33)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_numbers) \Rightarrow (k1_real_1\ X0 = k4_xcmplx_0\ X0) \quad (34)$$

Assume the following.

$$k12_quaterni = k5_quaterni \quad (35)$$

Assume the following.

$$k11_quaterni = k4_quaterni \quad (36)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_quaterni X0) \Rightarrow ((m1_subset_1 X0 k1_numbers) \Rightarrow ((\\ X0 = k17_quaterni X0) \wedge ((k18_quaterni X0 = k6_numbers) \wedge ((k19_quaterni \\ X0 = k6_numbers) \wedge (k20_quaterni X0 = k6_numbers)))))) \end{aligned} \quad (37)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\ X1 k1_numbers) \Rightarrow (k6_quaterni X0 X1 k6_numbers k6_numbers = k5_arytm_0 \\ X0 X1)) \end{aligned} \quad (38)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (k28_quaterni (k28_quaterni X0) = X0) \quad (39)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (k1_real_1 (k1_real_1 X0) = X0) \quad (40)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.((v1_quaterni X0) \wedge (v1_quaterni X1)) \Rightarrow (\\ v1_quaterni (k10_quaterni X0 X1)) \end{aligned} \quad (41)$$

Assume the following.

$$v1_quaterni k5_quaterni \quad (42)$$

Assume the following.

$$v1_quaterni k4_quaterni \quad (43)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge \\ (v1_xreal_0 (k4_xcmplx_0 X0))) \end{aligned} \quad (44)$$

Assume the following.

$$v1_quaterni k1_xcmplx_0 \quad (45)$$

Assume the following.

$$v1_xboole_0 k1_xboole_0 \quad (46)$$

Assume the following.

$$\forall X0.((\neg v3_xxreal_0 X0) \wedge (v1_xreal_0 X0)) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge (\neg v2_xxreal_0 (k4_xcmplx_0 X0))) \quad (47)$$

Assume the following.

$$\forall X0.((\neg v2_xxreal_0 X0) \wedge (v1_xreal_0 X0)) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge (\neg v3_xxreal_0 (k4_xcmplx_0 X0))) \quad (48)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (v1_quaterni (k7_quatern2 X0)) \quad (49)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (v1_xcmplx_0 (k4_xcmplx_0 X0)) \quad (50)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (m1_subset_1 (k31_quaterni X0) k1_quaterni) \quad (51)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (m1_subset_1 (k28_quaterni X0) k1_quaterni) \quad (52)$$

Assume the following.

$$\forall X0.\forall X1.((v1_quaterni X0) \wedge (v1_quaterni X1)) \Rightarrow (m1_subset_1 (k27_quaterni X0 X1) k1_quaterni) \quad (53)$$

Assume the following.

$$v1_quaterni k22_quaterni \quad (54)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (m1_subset_1 (k20_quaterni X0) k1_numbers) \quad (55)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (m1_subset_1 (k1_real_1 X0) k1_numbers) \quad (56)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (m1_subset_1 (k19_quaterni X0) k1_numbers) \quad (57)$$

Assume the following.

$$\forall X0.(v1_quaterni X0) \Rightarrow (m1_subset_1 (k18_quaterni X0) k1_numbers) \quad (58)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0)\Rightarrow(m1_subset_1\ (k17_quaterni\ X0)\ k1_numbers) \quad (59)$$

Assume the following.

$$m1_subset_1\ k12_quaterni\ k1_quaterni \quad (60)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0\ X0)\Rightarrow(\forall X1.(v1_xcmplx_0\ X1)\Rightarrow(k6_xcmplx_0\ X0\ X1 = k2_xcmplx_0\ X0\ (k4_xcmplx_0\ X1))) \quad (61)$$

Assume the following.

$$\begin{aligned} \forall X0.(m1_subset_1\ X0\ k1_numbers)\Rightarrow(\forall X1.(m1_subset_1 \\ X1\ k1_numbers)\Rightarrow(((X1 = k6_numbers)\Rightarrow(k5_arytm_0\ X0\ X1 = X0))\wedge((\\ X1\neq k6_numbers)\Rightarrow(k5_arytm_0\ X0\ X1 = k5_funct_4\ k1_numbers\ k6_numbers \\ np_1\ X0\ X1)))) \end{aligned} \quad (62)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0)\Rightarrow(k3_quatern3\ X0 = k27_quaterni\ (k27_quaterni\ X0\ X0)\ X0) \quad (63)$$

Assume the following.

$$\forall X0.(v1_quaterni\ X0)\Rightarrow(k1_quatern3\ X0 = k27_quaterni\ X0\ X0) \quad (64)$$

Assume the following.

$$k22_quaterni = np_1 \quad (65)$$

Assume the following.

$$k12_quaterni = k6_quaterni\ k6_numbers\ k6_numbers\ k6_numbers\ np_1 \quad (66)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0\ X0)\wedge(v1_xcmplx_0\ X1))\Rightarrow(k2_xcmplx_0\ X0\ X1 = k2_xcmplx_0\ X1\ X0) \quad (67)$$

Assume the following.

$$\forall X0.((v1_xxreal_0\ X0)\wedge((\neg v2_xxreal_0\ X0)\wedge(\neg v3_xxreal_0\ X0)))\Rightarrow((v1_xboole_0\ X0)\wedge(v1_xxreal_0\ X0)) \quad (68)$$

Assume the following.

$$\forall X0.(v1_xreal_0\ X0)\Rightarrow(v1_xxreal_0\ X0) \quad (69)$$

Assume the following.

$$\forall X0.((v1_xreal_0 X0) \wedge (v2_xreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xreal_0 X0) \wedge (\neg v3_xreal_0 X0))) \quad (70)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (71)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_quaterni) \Rightarrow (v1_quaterni X0) \quad (72)$$

Theorem 1 $k4_quatern3 k12_quaterni = k28_quaterni k12_quaterni$.