

l67_quaterni (TMM- vAvY5B7ik6uBEZ1Tc6cAK3reQdpBRcv9)

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Let $v1_quaterni : \iota \Rightarrow o$ be given. Let $k17_quaterni : \iota \Rightarrow \iota$ be given. Let $k10_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(v1_quaterni X0) \Rightarrow (\forall X1.(v1_quaterni X1) \Rightarrow (\forall X2. \\
& (v1_quaterni X2) \Rightarrow ((X2 = k10_quaterni X0 X1) \Rightarrow ((k17_quaterni X2 = \\
& \quad k9_real_1 (k9_real_1 (k9_real_1 (k8_real_1 (k17_quaterni X0) \\
& \quad (k17_quaterni X1)) (k8_real_1 (k18_quaterni X0) (k18_quaterni \\
& \quad X1))) (k8_real_1 (k19_quaterni X0) (k19_quaterni X1))) (k8_real_1 \\
& (k20_quaterni X0) (k20_quaterni X1)))) \wedge ((k18_quaterni X2 = k9_real_1 \\
& \quad (k7_real_1 (k7_real_1 (k8_real_1 (k17_quaterni X0) (k18_quaterni \\
& \quad X1)) (k8_real_1 (k18_quaterni X0) (k17_quaterni X1))) (k8_real_1 \\
& \quad (k19_quaterni X0) (k20_quaterni X1))) (k8_real_1 (k20_quaterni \\
& \quad X0) (k19_quaterni X1))) \wedge ((k19_quaterni X2 = k9_real_1 (k7_real_1 \\
& (k7_real_1 (k8_real_1 (k17_quaterni X0) (k19_quaterni X1)) (k8_real_1 \\
& \quad (k19_quaterni X0) (k17_quaterni X1))) (k8_real_1 (k20_quaterni \\
& \quad X0) (k18_quaterni X1))) (k8_real_1 (k18_quaterni X0) (k20_quaterni \\
& \quad X1))) \wedge (k20_quaterni X2 = k9_real_1 (k7_real_1 (k7_real_1 (k8_real_1 \\
& \quad (k17_quaterni X0) (k20_quaterni X1)) (k8_real_1 (k20_quaterni \\
& \quad X0) (k17_quaterni X1))) (k8_real_1 (k18_quaterni X0) (k19_quaterni \\
& \quad X1))) (k8_real_1 (k19_quaterni X0) (k18_quaterni X1)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((v1_quaterni X0) \wedge (v1_quaterni X1)) \Rightarrow (v1_quaterni (k10_quaterni X0 X1)) \tag{2}$$

Theorem 1

$$\begin{aligned} \forall X0.(v1_quaterni\ X0) \Rightarrow (\forall X1.(v1_quaterni\ X1) \Rightarrow ((\\ & k17_quaterni\ (k10_quaterni\ X0\ X1) = k9_real_1\ (k9_real_1\ (k9_real_1 \\ & (k8_real_1\ (k17_quaterni\ X0)\ (k17_quaterni\ X1))\ (k8_real_1\ (k18_quaterni \\ & X0)\ (k18_quaterni\ X1)))\ (k8_real_1\ (k19_quaterni\ X0)\ (k19_quaterni \\ & X1)))\ (k8_real_1\ (k20_quaterni\ X0)\ (k20_quaterni\ X1))) \wedge ((k18_quaterni \\ & (k10_quaterni\ X0\ X1) = k9_real_1\ (k7_real_1\ (k7_real_1\ (k8_real_1 \\ & (k17_quaterni\ X0)\ (k18_quaterni\ X1))\ (k8_real_1\ (k18_quaterni \\ & X0)\ (k17_quaterni\ X1)))\ (k8_real_1\ (k19_quaterni\ X0)\ (k20_quaterni \\ & X1)))\ (k8_real_1\ (k20_quaterni\ X0)\ (k19_quaterni\ X1))) \wedge ((k19_quaterni \\ & (k10_quaterni\ X0\ X1) = k9_real_1\ (k7_real_1\ (k7_real_1\ (k8_real_1 \\ & (k17_quaterni\ X0)\ (k19_quaterni\ X1))\ (k8_real_1\ (k19_quaterni \\ & X0)\ (k17_quaterni\ X1)))\ (k8_real_1\ (k20_quaterni\ X0)\ (k18_quaterni \\ & X1)))\ (k8_real_1\ (k18_quaterni\ X0)\ (k20_quaterni\ X1))) \wedge (k20_quaterni \\ & (k10_quaterni\ X0\ X1) = k9_real_1\ (k7_real_1\ (k7_real_1\ (k8_real_1 \\ & (k17_quaterni\ X0)\ (k20_quaterni\ X1))\ (k8_real_1\ (k20_quaterni \\ & X0)\ (k17_quaterni\ X1)))\ (k8_real_1\ (k18_quaterni\ X0)\ (k19_quaterni \\ & X1)))\ (k8_real_1\ (k19_quaterni\ X0)\ (k18_quaterni\ X1)))))) \end{aligned}$$