

t97\_quaterni  
(TMauF56GuQcgXQEa3h7AUpTjMn3cZxpnzTU)

October 27, 2020

Let  $v1\_quaterni : \iota \Rightarrow o$  be given. Let  $k17\_quaterni : \iota \Rightarrow \iota$  be given. Let  $k27\_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$  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. Let  $k10\_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. ((v1\_quaterni X0) \wedge (v1\_quaterni X1)) \Rightarrow (k27\_quaterni X0 X1 = k10\_quaterni X0 X1) \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (v1\_quaterni X0) \Rightarrow (\forall X1. (v1\_quaterni X1) \Rightarrow (( & \\ k17\_quaterni (k10\_quaterni X0 X1) = k9\_real\_1 (k9\_real\_1 (k9\_real\_1 & \\ (k8\_real\_1 (k17\_quaterni X0) (k17\_quaterni X1)) (k8\_real\_1 (k18\_quaterni & \\ X0) (k18\_quaterni X1))) (k8\_real\_1 (k19\_quaterni X0) (k19\_quaterni & \\ X1))) (k8\_real\_1 (k20\_quaterni X0) (k20\_quaterni X1))) \wedge ((k18\_quaterni & \\ (k10\_quaterni X0 X1) = k9\_real\_1 (k7\_real\_1 (k7\_real\_1 (k8\_real\_1 & \\ (k17\_quaterni X0) (k18\_quaterni X1)) (k8\_real\_1 (k18\_quaterni & \\ X0) (k17\_quaterni X1))) (k8\_real\_1 (k19\_quaterni X0) (k20\_quaterni & \\ X1))) (k8\_real\_1 (k20\_quaterni X0) (k19\_quaterni X1))) \wedge ((k19\_quaterni & \\ (k10\_quaterni X0 X1) = k9\_real\_1 (k7\_real\_1 (k7\_real\_1 (k8\_real\_1 & \\ (k17\_quaterni X0) (k19\_quaterni X1)) (k8\_real\_1 (k19\_quaterni & \\ X0) (k17\_quaterni X1))) (k8\_real\_1 (k20\_quaterni X0) (k18\_quaterni & \\ X1))) (k8\_real\_1 (k18\_quaterni X0) (k20\_quaterni X1))) \wedge (k20\_quaterni & \\ (k10\_quaterni X0 X1) = k9\_real\_1 (k7\_real\_1 (k7\_real\_1 (k8\_real\_1 & \\ (k17\_quaterni X0) (k20\_quaterni X1)) (k8\_real\_1 (k20\_quaterni & \\ X0) (k17\_quaterni X1))) (k8\_real\_1 (k18\_quaterni X0) (k19\_quaterni & \\ X1))) (k8\_real\_1 (k19\_quaterni X0) (k18\_quaterni X1))))))))) \quad (2) \end{aligned}$$

**Theorem 1**

$$\begin{aligned} \forall X0.(v1\_quaterni\ X0) \Rightarrow (\forall X1.(v1\_quaterni\ X1) \Rightarrow (( \\ & k17\_quaterni\ (k27\_quaterni\ X0\ X1) = k9\_real\_1\ (k9\_real\_1\ (k9\_real\_1 \\ & (k8\_real\_1\ (k17\_quaterni\ X0)\ (k17\_quaterni\ X1))\ (k8\_real\_1\ (k18\_quaterni \\ & X0)\ (k18\_quaterni\ X1)))\ (k8\_real\_1\ (k19\_quaterni\ X0)\ (k19\_quaterni \\ & X1)))\ (k8\_real\_1\ (k20\_quaterni\ X0)\ (k20\_quaterni\ X1))) \wedge ((k18\_quaterni \\ & (k27\_quaterni\ X0\ X1) = k9\_real\_1\ (k7\_real\_1\ (k7\_real\_1\ (k8\_real\_1 \\ & (k17\_quaterni\ X0)\ (k18\_quaterni\ X1))\ (k8\_real\_1\ (k18\_quaterni \\ & X0)\ (k17\_quaterni\ X1)))\ (k8\_real\_1\ (k19\_quaterni\ X0)\ (k20\_quaterni \\ & X1)))\ (k8\_real\_1\ (k20\_quaterni\ X0)\ (k19\_quaterni\ X1))) \wedge ((k19\_quaterni \\ & (k27\_quaterni\ X0\ X1) = k9\_real\_1\ (k7\_real\_1\ (k7\_real\_1\ (k8\_real\_1 \\ & (k17\_quaterni\ X0)\ (k19\_quaterni\ X1))\ (k8\_real\_1\ (k19\_quaterni \\ & X0)\ (k17\_quaterni\ X1)))\ (k8\_real\_1\ (k20\_quaterni\ X0)\ (k18\_quaterni \\ & X1)))\ (k8\_real\_1\ (k18\_quaterni\ X0)\ (k20\_quaterni\ X1))) \wedge (k20\_quaterni \\ & (k27\_quaterni\ X0\ X1) = k9\_real\_1\ (k7\_real\_1\ (k7\_real\_1\ (k8\_real\_1 \\ & (k17\_quaterni\ X0)\ (k20\_quaterni\ X1))\ (k8\_real\_1\ (k20\_quaterni \\ & X0)\ (k17\_quaterni\ X1)))\ (k8\_real\_1\ (k18\_quaterni\ X0)\ (k19\_quaterni \\ & X1)))\ (k8\_real\_1\ (k19\_quaterni\ X0)\ (k18\_quaterni\ X1)))))) \end{aligned}$$