

t34\_quaterni  
(TMdcK8wDhP42cPNCRZ2Ytc9KaWECyTRtdUG)

October 27, 2020

Let  $v1\_quaterni : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k17\_quaterni : \iota \Rightarrow \iota$  be given. Let  $k10\_quaterni : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_quaterni : \iota$  be given. Let  $k6\_numbers : \iota$  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  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k12\_quaterni : \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  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  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_quaterni : \iota$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k6\_xcmplx\_0 X0 \ k6\_numbers = X0) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_xcmplx\_0 \ np\_1 \ X0 = X0) \quad (2)$$

Assume the following.

$$\begin{aligned} & (k17\_quaterni \ k11\_quaterni = k6\_numbers) \wedge ((k18\_quaterni \ k11\_quaterni = \\ & \quad k6\_numbers) \wedge ((k19\_quaterni \ k11\_quaterni = np\_1) \wedge ((k20\_quaterni \\ & \quad k11\_quaterni = k6\_numbers) \wedge ((k17\_quaterni \ k12\_quaterni = k6\_numbers) \wedge \\ & \quad ((k18\_quaterni \ k12\_quaterni = k6\_numbers) \wedge ((k19\_quaterni \ k12\_quaterni = \\ & \quad \quad k6\_numbers) \wedge (k20\_quaterni \ k12\_quaterni = np\_1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k3\_xcmplx\_0 \ X0 \ k6\_numbers = k6\_numbers) \quad (4)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k2\_xcmplx\_0 \ X0 \ k6\_numbers = X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \text{ np\_1}) \wedge (m2\_subset\_1 \text{ np\_1 } k1\_numbers \text{ k5\_numbers})) \wedge \\ & ((m1\_subset\_1 \text{ np\_1 } k5\_numbers) \wedge (m1\_subset\_1 \text{ np\_1 } k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 \text{ k1\_numbers}) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k9\_real\_1 X0 X1 = k6\_xcmplx\_0 X0 X1) \quad (7)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 \text{ k1\_numbers}) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k8\_real\_1 X0 X1 = k3\_xcmplx\_0 X0 X1) \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. ((m1\_subset\_1 X0 \text{ k1\_numbers}) \wedge (v1\_xreal\_0 X1)) \Rightarrow (k7\_real\_1 X0 X1 = k2\_xcmplx\_0 X0 X1) \quad (9)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (10)$$

Assume the following.

$$k11\_quaterni = k4\_quaterni \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_quaterni X0) \Rightarrow (\forall X1. (m1\_subset\_1 X1 \text{ k1\_numbers}) \Rightarrow \\ & ((X0 = X1) \Rightarrow ((k17\_quaterni X0 = X1) \wedge ((k18\_quaterni X0 = k6\_numbers) \wedge \\ & ((k19\_quaterni X0 = k6\_numbers) \wedge (k20\_quaterni X0 = k6\_numbers)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_quaterni X0) \Rightarrow (\forall X1. (v1\_quaterni X1) \Rightarrow (( \\ & k17\_quaterni (k10\_quaterni X0 X1) = k9\_real\_1 (k9\_real\_1 (k9\_real\_1 \\ & (k8\_real\_1 (k17\_quaterni X0) (k17\_quaterni X1)) (k8\_real\_1 (k18\_quaterni \\ & X0) (k18\_quaterni X1))) (k8\_real\_1 (k19\_quaterni X0) (k19\_quaterni \\ & X1))) (k8\_real\_1 (k20\_quaterni X0) (k20\_quaterni X1))) \wedge ((k18\_quaterni \\ & (k10\_quaterni X0 X1) = k9\_real\_1 (k7\_real\_1 (k7\_real\_1 (k8\_real\_1 \\ & (k17\_quaterni X0) (k18\_quaterni X1)) (k8\_real\_1 (k18\_quaterni \\ & X0) (k17\_quaterni X1))) (k8\_real\_1 (k19\_quaterni X0) (k20\_quaterni \\ & X1))) (k8\_real\_1 (k20\_quaterni X0) (k19\_quaterni X1))) \wedge ((k19\_quaterni \\ & (k10\_quaterni X0 X1) = k9\_real\_1 (k7\_real\_1 (k7\_real\_1 (k8\_real\_1 \\ & (k17\_quaterni X0) (k19\_quaterni X1)) (k8\_real\_1 (k19\_quaterni \\ & X0) (k17\_quaterni X1))) (k8\_real\_1 (k20\_quaterni X0) (k18\_quaterni \\ & X1))) (k8\_real\_1 (k18\_quaterni X0) (k20\_quaterni X1))) \wedge (k20\_quaterni \\ & (k10\_quaterni X0 X1) = k9\_real\_1 (k7\_real\_1 (k7\_real\_1 (k8\_real\_1 \\ & (k17\_quaterni X0) (k20\_quaterni X1)) (k8\_real\_1 (k20\_quaterni \\ & X0) (k17\_quaterni X1))) (k8\_real\_1 (k18\_quaterni X0) (k19\_quaterni \\ & X1))) (k8\_real\_1 (k19\_quaterni X0) (k18\_quaterni X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$v1\_quaterni\ k4\_quaterni \quad (14)$$

Assume the following.

$$v3\_membered\ k1\_numbers \quad (15)$$

Assume the following.

$$\forall X0.(v1\_quaterni\ X0) \Rightarrow (m1\_subset\_1\ (k18\_quaterni\ X0)\ k1\_numbers) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1\ X0\ k1\_numbers) \wedge (v1\_xreal\_0\ X1)) \Rightarrow (k8\_real\_1\ X0\ X1 = k8\_real\_1\ X1\ X0) \quad (17)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0) \Rightarrow (v1\_xcmplx\_0\ X0) \quad (18)$$

Assume the following.

$$\forall X0.(v3\_membered\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ X0) \Rightarrow (v1\_xreal\_0\ X1)) \quad (19)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_quaterni\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ k1\_numbers) \Rightarrow \\ & ((X0 = X1) \Rightarrow ((k17\_quaterni\ (k10\_quaterni\ X0\ k11\_quaterni) = k6\_numbers) \wedge \\ & ((k18\_quaterni\ (k10\_quaterni\ X0\ k11\_quaterni) = k6\_numbers) \wedge \\ & ((k19\_quaterni\ (k10\_quaterni\ X0\ k11\_quaterni) = X1) \wedge (k20\_quaterni \\ & (k10\_quaterni\ X0\ k11\_quaterni) = k6\_numbers)))))) \end{aligned}$$