

t1\_tietze

(TMZNRHFbtM4dNucJx2vjjCVZcJpiPuuJo54)

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Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_complex1 : \iota \Rightarrow \iota$  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  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (k17\_complex1 (k6\_xcmplx\_0 X0 X1) = k17\_complex1 (k6\_xcmplx\_0 X1 X0))) \quad (1)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2.(v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 (k6\_xcmplx\_0 X0 X1) X2) \Rightarrow (r1\_xxreal\_0 (k6\_xcmplx\_0 X0 X2) X1)))) \quad (2)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2.(v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 (k6\_xcmplx\_0 X0 X1) X2) \Rightarrow (r1\_xxreal\_0 X0 (k2\_xcmplx\_0 X1 X2)))))) \quad (3)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (((r1\_xxreal\_0 (k4\_xcmplx\_0 X0) X1) \wedge (r1\_xxreal\_0 X1 X0)) \Leftrightarrow (r1\_xxreal\_0 (k17\_complex1 X1) X0))) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k6\_xcmplx\_0 X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (6)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 (k17\_complex1 (k6\_xcmplx\_0 X0 \\ & X1)) X2) \Rightarrow ((r1\_xxreal\_0 (k6\_xcmplx\_0 X1 X2) X0) \wedge (r1\_xxreal\_0 X0 \\ & (k2\_xcmplx\_0 X1 X2)))))) \end{aligned}$$