

t102\_xreal\_1  
(TMHjQQ9yQ29EVTBzZDKrr1TUGQFvsmhYgmu)

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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  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 X1 (k3\_xcmplx\_0 X2 X0)) \Rightarrow ((r1\_xxreal\_0 \\ & X0 k6\_numbers) \vee (r1\_xxreal\_0 (k7\_xcmplx\_0 X1 X0) X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((r1\_xxreal\_0 (k3\_xcmplx\_0 X1 X0) X2) \Rightarrow ((r1\_xxreal\_0 \\ & X0 k6\_numbers) \vee (r1\_xxreal\_0 X1 (k7\_xcmplx\_0 X2 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v1\_xcmplx\_0 X0) \wedge ((v1\_xcmplx\_0 \\ & X1) \wedge (v1\_xcmplx\_0 X2))) \Rightarrow (k3\_xcmplx\_0 X0 (k7\_xcmplx\_0 X1 X2) = k7\_xcmplx\_0 \\ & (k3\_xcmplx\_0 X0 X1) X2) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k7\_xcmplx\_0 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0) \wedge (v1\_xreal\_0 X1)) \Rightarrow (v1\_xreal\_0 (k3\_xcmplx\_0 X0 X1)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (k3\_xcmplx\_0 X0 X1 = k3\_xcmplx\_0 X1 X0) \quad (6)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (v1\_xcmplx\_0 X0) \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow ((r1\_xxreal\_0 ( \\ & k3\_xcmplx\_0 X2 X1) (k3\_xcmplx\_0 X3 X0)) \Rightarrow ((r1\_xxreal\_0 X0 k6\_numbers) \vee \\ & (r1\_xxreal\_0 X1 k6\_numbers) \vee (r1\_xxreal\_0 (k7\_xcmplx\_0 X2 X0) \\ & (k7\_xcmplx\_0 X3 X1)))))))))) \end{aligned}$$