

t8\_polyeq\_1 (TMd-  
NGUNT3FKXoZesfXnQMN6y6JfpGDGRoWR)

October 27, 2020

Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k3\_polyeq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k3\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_0 : \iota$  be given. Let  $k3\_square\_1 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \neg(v1\_xboole\_0 X0) \wedge ((X0 \neq X1) \wedge (v1\_xboole\_0 X1)) \quad (1)$$

Assume the following.

$$\forall X0. (v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (2)$$

Assume the following.

$$\forall X0. (v1\_xcmplx\_0 X0) \Rightarrow (k7\_xcmplx\_0 X0 np\_1 = X0) \quad (3)$$

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.

$$\forall X0. \forall X1. ((v1\_xcmplx\_0 X0) \wedge (v1\_xcmplx\_0 X1)) \Rightarrow (k2\_xcmplx\_0 (k4\_xcmplx\_0 X0) (k4\_xcmplx\_0 X1) = k4\_xcmplx\_0 (k2\_xcmplx\_0 X0 X1)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v1\_xcmplx\_0 X0)\wedge((v1\_xcmplx\_0 X1)\wedge(v1\_xcmplx\_0 X2)))\Rightarrow(k3\_xcmplx\_0 X0 (k7\_xcmplx\_0 X1 X2) = k7\_xcmplx\_0 (k3\_xcmplx\_0 X0 X1) X2) \quad (7)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(k7\_xcmplx\_0 np\_1 X0 = k5\_xcmplx\_0 X0) \quad (8)$$

Assume the following.

$$((v2\_xxreal\_0 np\_2)\wedge(m2\_subset\_1 np\_2 k1\_numbers k5\_numbers))\wedge((m1\_subset\_1 np\_2 k5\_numbers)\wedge(m1\_subset\_1 np\_2 k1\_numbers)) \quad (9)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(k3\_xcmplx\_0 X0 (k4\_xcmplx\_0 np\_1) = k4\_xcmplx\_0 X0) \quad (10)$$

Assume the following.

$$((v2\_xxreal\_0 np\_1)\wedge(m2\_subset\_1 np\_1 k1\_numbers k5\_numbers))\wedge((m1\_subset\_1 np\_1 k5\_numbers)\wedge(m1\_subset\_1 np\_1 k1\_numbers)) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k3\_xcmplx\_0 (k5\_xcmplx\_0 X0) (k5\_xcmplx\_0 X1) = k5\_xcmplx\_0 (k3\_xcmplx\_0 X0 X1)) \quad (12)$$

Assume the following.

$$(m2\_subset\_1 np\_0 k1\_numbers k5\_numbers)\wedge((m1\_subset\_1 np\_0 k5\_numbers)\wedge(m1\_subset\_1 np\_0 k1\_numbers)) \quad (13)$$

Assume the following.

$$v1\_xboole\_0 np\_0 \quad (14)$$

Assume the following.

$$k4\_xcmplx\_0 (k4\_xcmplx\_0 np\_2) = np\_2 \quad (15)$$

Assume the following.

$$k4\_xcmplx\_0 (k4\_xcmplx\_0 np\_1) = np\_1 \quad (16)$$

Assume the following.

$$k4\_xcmplx\_0 np\_0 = np\_0 \quad (17)$$

Assume the following.

$$k3\_xcmplx\_0 \text{ } np\_0 \text{ } np\_1 = np\_0 \quad (18)$$

Assume the following.

$$k3\_xcmplx\_0 \text{ } np\_0 \text{ } np\_0 = np\_0 \quad (19)$$

Assume the following.

$$k7\_xcmplx\_0 (k4\_xcmplx\_0 \text{ } np\_2) \text{ } np\_2 = k4\_xcmplx\_0 \text{ } np\_1 \quad (20)$$

Assume the following.

$$k7\_xcmplx\_0 \text{ } np\_2 \text{ } np\_2 = np\_1 \quad (21)$$

Assume the following.

$$k7\_xcmplx\_0 \text{ } np\_1 (k4\_xcmplx\_0 \text{ } np\_1) = k4\_xcmplx\_0 \text{ } np\_1 \quad (22)$$

Assume the following.

$$k2\_xcmplx\_0 (k4\_xcmplx\_0 \text{ } np\_1) (k4\_xcmplx\_0 \text{ } np\_1) = k4\_xcmplx\_0 \text{ } np\_2 \quad (23)$$

Assume the following.

$$k2\_xcmplx\_0 \text{ } np\_0 \text{ } np\_0 = np\_0 \quad (24)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (25)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 \text{ } X0) \Rightarrow (k5\_xcmplx\_0 (k5\_xcmplx\_0 \text{ } X0) = X0) \quad (26)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 \text{ } X0) \Rightarrow (k4\_xcmplx\_0 (k4\_xcmplx\_0 \text{ } X0) = X0) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 \text{ } X0) \wedge (v1\_xreal\_0 \text{ } X1)) \Rightarrow (v1\_xreal\_0 (k7\_xcmplx\_0 \text{ } X0 \text{ } X1)) \quad (28)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 \text{ } X0) \wedge (v1\_xcmplx\_0 \text{ } X0)) \Rightarrow ((\neg v1\_xboole\_0 (k5\_xcmplx\_0 \text{ } X0)) \wedge (v1\_xcmplx\_0 (k5\_xcmplx\_0 \text{ } X0))) \quad (29)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(v1\_xreal\_0 (k2\_xcmplx\_0 X0 X1)) \quad (30)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0))\wedge(v1\_xreal\_0 (k4\_xcmplx\_0 X0))) \quad (31)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(v1\_xcmplx\_0 (k5\_xcmplx\_0 X0)) \quad (32)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \quad (33)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(\forall X1.(v1\_xcmplx\_0 X1)\Rightarrow(k7\_xcmplx\_0 X0 X1 = k3\_xcmplx\_0 X0 (k5\_xcmplx\_0 X1))) \quad (34)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(\forall X1.(v1\_xcmplx\_0 X1)\Rightarrow(\forall X2.(v1\_xcmplx\_0 X2)\Rightarrow(\forall X3.(v1\_xcmplx\_0 X3)\Rightarrow(k3\_polyeq\_1 X0 X1 X2 X3 = k2\_xcmplx\_0 (k2\_xcmplx\_0 (k3\_xcmplx\_0 X0 (k3\_square\_1 X3)) (k3\_xcmplx\_0 X1 X3)) X2)))) \quad (35)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(k3\_square\_1 X0 = k3\_xcmplx\_0 X0 X0) \quad (36)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k3\_xcmplx\_0 X0 X1 = k3\_xcmplx\_0 X1 X0) \quad (37)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0 X0)\wedge(v1\_xcmplx\_0 X1))\Rightarrow(k2\_xcmplx\_0 X0 X1 = k2\_xcmplx\_0 X1 X0) \quad (38)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(v1\_xcmplx\_0 X0) \quad (39)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (40)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xcmplx\_0 X0) \quad (41)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.(v1\_xcmplx\_0 X1) \Rightarrow (\forall X2. \\ & (v1\_xcmplx\_0 X2) \Rightarrow ((\forall X3.(v1\_xreal\_0 X3) \Rightarrow (k3\_polyeq\_1 \\ k6\_numbers X1 X2 X3 = k6\_numbers)) \Rightarrow ((X1 = k6\_numbers) \vee (X0 = k4\_xcmplx\_0 \\ & (k7\_xcmplx\_0 X2 X1)))))) \end{aligned}$$