

t2_borsuk_6 (TM-
MaQz4qE2kDK8CynKHQ9P99RrESpecb7Ep)

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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 $k7_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $u1_struct_0 : \iota \Rightarrow \iota$ be given. Let $k4_topmetr : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $v3_xxreal_0 : \iota \Rightarrow o$ be given. Let $v2_xxreal_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xcmplx_0 : \iota \Rightarrow \iota$ 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 $v1_xxreal_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 X1) \Leftrightarrow (r1_xxreal_0 (k6_xcmplx_0 \\ & X0 X2) (k6_xcmplx_0 X1 X2)))))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\neg(\neg \\ & r1_xxreal_0 X0 X1) \wedge ((\neg v3_xxreal_0 X1) \wedge (\neg v2_xxreal_0 X0)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\neg(v1_xboole_0 X0) \wedge ((X0 \neq X1) \wedge (v1_xboole_0 \\ & X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k7_xcmplx_0 k6_numbers X0 = k6_numbers) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xxreal_0 \\ & X0 X1) \wedge (v2_xxreal_0 X0)) \Rightarrow (v2_xxreal_0 X1))) \end{aligned} \quad (6)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (k2_xcmplx_0 X0 \ k6_numbers = X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow (\forall X3.(v1_xreal_0 X3) \Rightarrow ((r1_xxreal_0 (\\ k6_xcmplx_0 X0 X1) (k6_xcmplx_0 X2 X3)) \Rightarrow (r1_xxreal_0 (k6_xcmplx_0 \\ X3 X2) (k6_xcmplx_0 X1 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(v1_xcmplx_0 X0) \Rightarrow (\forall X1.(v1_xcmplx_0 X1) \Rightarrow (k2_xcmplx_0 X0 X1 = k6_xcmplx_0 X0 (k4_xcmplx_0 X1))) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 (k6_xcmplx_0 X0 X1) X2) \Rightarrow (r1_xxreal_0 \\ (k6_xcmplx_0 X0 X2) X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 (k6_xcmplx_0 X1 X2)) \Rightarrow (r1_xxreal_0 \\ X2 (k6_xcmplx_0 X1 X0)))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 X1) \Leftrightarrow (r1_xxreal_0 (k6_xcmplx_0 \\ X2 X1) (k6_xcmplx_0 X2 X0)))) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 \ k1_numbers \ k5_numbers)) \wedge \\ ((m1_subset_1 np_1 \ k5_numbers) \wedge (m1_subset_1 np_1 \ k1_numbers)) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 X0) \wedge (v1_xcmplx_0 X1)) \Rightarrow (k2_xcmplx_0 X0 (k4_xcmplx_0 X1) = k6_xcmplx_0 X0 X1) \quad (14)$$

Assume the following.

$$(m2_subset_1 np_0 \ k1_numbers \ k5_numbers) \wedge ((m1_subset_1 np_0 \ k5_numbers) \wedge (m1_subset_1 np_0 \ k1_numbers)) \quad (15)$$

Assume the following.

$$v1_xboole_0 \text{ np_}0 \quad (16)$$

Assume the following.

$$k4_xcmplx_0 \text{ np_}0 = \text{np_}0 \quad (17)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (18)$$

Assume the following.

$$\exists X0.(v1_xboole_0 X0) \wedge ((v1_xcmplx_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (v1_xreal_0 X0))) \quad (19)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow (((r1_xxreal_0 k6_numbers X0) \wedge (r1_xxreal_0 \\ X1 X2)) \Rightarrow (r1_xxreal_0 (k7_xcmplx_0 X1 X0) (k7_xcmplx_0 X2 X0)))))) \end{aligned} \quad (20)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 (k2_xcmplx_0 X0 X1) X2) \Rightarrow (r1_xxreal_0 \\ X0 (k6_xcmplx_0 X2 X1)))))) \end{aligned} \quad (21)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xxreal_0 \\ X0 X1) \wedge (r1_xxreal_0 k6_numbers X0)) \Rightarrow (r1_xxreal_0 (k7_xcmplx_0 \\ X0 X1) \text{ np_}1))) \end{aligned} \quad (22)$$

Assume the following.

$$\begin{aligned} \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow ((X2 \in u1_struct_0 (k4_topmetr \\ X0 X1)) \Leftrightarrow ((r1_xxreal_0 X0 X2) \wedge (r1_xxreal_0 X2 X1)))))) \end{aligned} \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow (v1_xreal_0 (k7_xcmplx_0 X0 X1)) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 X0) \wedge (v1_xreal_0 X1)) \Rightarrow (v1_xreal_0 (k6_xcmplx_0 X0 X1)) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge (v1_xreal_0 (k4_xcmplx_0 X0))) \quad (26)$$

Assume the following.

$$\forall X0.((\neg v2_xxreal_0 X0) \wedge (v1_xreal_0 X0)) \Rightarrow ((v1_xcmplx_0 (k4_xcmplx_0 X0)) \wedge (\neg v3_xxreal_0 (k4_xcmplx_0 X0))) \quad (27)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0) \wedge (v3_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v2_xxreal_0 X0))) \quad (28)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xxreal_0 X0) \quad (29)$$

Assume the following.

$$\forall X0.((v1_xxreal_0 X0) \wedge (v2_xxreal_0 X0)) \Rightarrow ((\neg v1_xboole_0 X0) \wedge ((v1_xxreal_0 X0) \wedge (\neg v3_xxreal_0 X0))) \quad (30)$$

Assume the following.

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (v1_xcmplx_0 X0) \quad (31)$$

Assume the following.

$$\forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (v1_xreal_0 X0) \quad (32)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X2) \wedge (r1_xxreal_0 X2 X1)) \Rightarrow (\\ & k7_xcmplx_0 (k6_xcmplx_0 X2 X0) (k6_xcmplx_0 X1 X0) \in u1_struct_0 \\ & (k4_topmetr k6_numbers np_1)))))) \end{aligned}$$