

t15_topreal6 (TMH-
bEarW558EwarhzNehyXZGevUgAQnYMVz)

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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 $k6_numbers : \iota$ be given. Let $k2_rcomp_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k18_complex1 : \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow (((\neg r1_xxreal_0 X2 (k6_xcmplx_0 X0 X1)) \wedge (\neg r1_xxreal_0 \\ & (k2_xcmplx_0 X0 X1) X2)) \Leftrightarrow (\neg r1_xxreal_0 X1 (k18_complex1 (k6_xcmplx_0 \\ & X2 X0)))))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow ((X0 \in k2_rcomp_1 (k6_xcmplx_0 X1 X2) (k2_xcmplx_0 \\ & X1 X2)) \Leftrightarrow (\neg r1_xxreal_0 X2 (k18_complex1 (k6_xcmplx_0 X0 X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xreal_0 X2) \Rightarrow ((r1_xxreal_0 (k2_xcmplx_0 X0 X1) X2) \Leftrightarrow (r1_xxreal_0 \\ & X0 (k6_xcmplx_0 X2 X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow (((r1_xxreal_0 \\ & k6_numbers X0) \Rightarrow (r1_xxreal_0 X1 (k2_xcmplx_0 X0 X1))) \wedge (((r1_xxreal_0 \\ & X1 (k2_xcmplx_0 X0 X1)) \Rightarrow (r1_xxreal_0 k6_numbers X0)) \wedge ((\neg (\neg r1_xxreal_0 \\ & X0 k6_numbers) \wedge (r1_xxreal_0 (k2_xcmplx_0 X0 X1) X1)) \wedge ((\neg (\neg r1_xxreal_0 \\ & (k2_xcmplx_0 X0 X1) X1) \wedge (r1_xxreal_0 X0 k6_numbers)) \wedge ((r1_xxreal_0 \\ & k6_numbers X0) \Rightarrow (r1_xxreal_0 (k6_xcmplx_0 X1 X0) X1)) \wedge (((r1_xxreal_0 \\ & (k6_xcmplx_0 X1 X0) X1) \Rightarrow (r1_xxreal_0 k6_numbers X0)) \wedge ((\neg (\neg r1_xxreal_0 \\ & X0 k6_numbers) \wedge (r1_xxreal_0 X1 (k6_xcmplx_0 X1 X0))) \wedge ((\neg (\neg r1_xxreal_0 \\ & X1 (k6_xcmplx_0 X1 X0)) \wedge (r1_xxreal_0 X0 k6_numbers)))))))))) \end{aligned} \tag{4}$$

Theorem 1

$$\forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.(v1_xreal_0 X1) \Rightarrow ((\neg r1_xreal_0 X1 \text{ } k6_numbers) \Rightarrow (X0 \in k2_rcomp_1 (k6_xcmplx_0 X0 X1) (k2_xcmplx_0 X0 X1))))$$