

t175_xxreal_1

(TMQXyzULH92vDr3XFzkNdZ2iJy68kHPswEd)

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Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_tarSKI : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarSKI : \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 (k2_xboole_0 X0 X1) = k2_xboole_0 X0 X1 \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (\forall X3. (v1_xxreal_0 X3) \Rightarrow ((r1_tarSKI (\\ & k2_xxreal_1 X0 X1) (k1_xxreal_1 X2 X3)) \Rightarrow ((r1_xxreal_0 X1 X0) \vee (\\ & (r1_xxreal_0 X2 X0) \wedge (r1_xxreal_0 X1 X3))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. \forall X2. k2_xboole_0 (k2_xboole_0 X0 X1) X2 = k2_xboole_0 X0 (k2_xboole_0 X1 X2) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((X0 \in k2_xxreal_1 X1 X2) \Leftrightarrow ((r1_xxreal_0 X1 X0) \wedge \\ & (\neg r1_xxreal_0 X2 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (r1_xxreal_0 X0 X2)))) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. (v1_xxreal_0 X0) \Rightarrow (\forall X1. (v1_xxreal_0 X1) \Rightarrow (r1_tarSKI (k2_xxreal_1 X0 X1) (k1_xxreal_1 X0 X1))) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((X0 \in k1_xxreal_1 X1 X2) \Leftrightarrow ((r1_xxreal_0 X1 X0) \wedge \\ & (r1_xxreal_0 X0 X2)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (k2_xboole_0 (k3_xxreal_1 X0 X1) (k3_xxreal_1 X1 X2) = k3_xxreal_1 \\ & X0 X2)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow ((r1_xxreal_0 X0 X1) \Rightarrow ((r1_xxreal_0 X2 X1) \vee \\ & (k2_xboole_0 (k1_xxreal_1 X0 X1) (k4_xxreal_1 X1 X2) = k2_xxreal_1 \\ & X0 X2)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X1 X2)) \Rightarrow \\ & (k2_xboole_0 (k2_xxreal_1 X0 X1) (k1_xxreal_1 X1 X2) = k1_xxreal_1 \\ & X0 X2)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2.(v1_xxreal_0 \\ & X2) \Rightarrow ((X0 \in k2_xxreal_1 X1 X2) \Rightarrow ((X0 \in k1_xxreal_1 X1 X2) \wedge (X0 \neq X2)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow ((\\ & r1_xxreal_0 X0 X1) \Rightarrow (k1_xxreal_1 X0 X1 = k2_xboole_0 (k1_tarSKI \\ & X0) (k3_xxreal_1 X0 X1)))))) \end{aligned} \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (13)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (\forall X3.(v1_xxreal_0 X3) \Rightarrow (((r1_xxreal_0 \\ & X0 X1) \wedge (r1_xxreal_0 X2 X3)) \Rightarrow ((r1_xxreal_0 X2 X1) \vee (k2_xboole_0 \\ & (k2_xxreal_1 X0 X2) (k3_xxreal_1 X1 X3) = k1_xxreal_1 X0 X3)))))) \end{aligned}$$