

t155_xxreal_1 (TMPE-
Jgw8jTpd4nRKN662iTFzUpE4GmMkYVX)

October 27, 2020

Let $v1_xxreal_0 : \iota \Rightarrow o$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k3_xxreal_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\neg (\neg r1_xxreal_0 X1 X0) \wedge (v1_xboole_0 (k2_xxreal_1 X0 X1)))) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.k3_xboole_0 (k3_xboole_0 X0 X1) X2 = k3_xboole_0 X0 (k3_xboole_0 X1 X2) \quad (2)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2.(v1_xxreal_0 X2) \Rightarrow (\forall X3.(v1_xxreal_0 X3) \Rightarrow (((r1_xxreal_0 X1 X0) \wedge (r1_xxreal_0 X2 X3)) \Rightarrow (k3_xboole_0 (k3_xxreal_1 X0 X2) (k2_xxreal_1 X1 X3) = k4_xxreal_1 X0 X3)))))) \quad (3)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2.(v1_xxreal_0 X2) \Rightarrow (\forall X3.(v1_xxreal_0 X3) \Rightarrow (((r1_xxreal_0 X0 X1) \wedge (r1_xxreal_0 X2 X3)) \Rightarrow (k3_xboole_0 (k2_xxreal_1 X0 X2) (k2_xxreal_1 X1 X3) = k2_xxreal_1 X1 X2)))))) \quad (4)$$

Assume the following.

$$\forall X0.(v1_xxreal_0 X0) \Rightarrow (v1_xboole_0 (k2_xxreal_1 X0 X0)) \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (6)$$

Theorem 1

$$\begin{aligned} & \forall X0.(v1_xxreal_0 X0) \Rightarrow (\forall X1.(v1_xxreal_0 X1) \Rightarrow (\forall X2. \\ & (v1_xxreal_0 X2) \Rightarrow (\forall X3.(v1_xxreal_0 X3) \Rightarrow (((r1_xxreal_0 \\ & X1 X0) \wedge (r1_xxreal_0 X3 X2)) \Rightarrow (k3_xboole_0 (k4_xxreal_1 X0 X2) (\\ & k2_xxreal_1 X1 X3) = k4_xxreal_1 X0 X3)))))) \end{aligned}$$