

t72_xboole_1

(TMKgqiRGNDPuoBcu3AZSp2f7osVWdnPk7jh)

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Let $k2_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_xboole_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_xboole_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_xboole_0 : \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. k3_xboole_0 X0 (k2_xboole_0 X1 X2) = k2_xboole_0 (k3_xboole_0 X0 X1) (k3_xboole_0 X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. k3_xboole_0 X0 (k2_xboole_0 X0 X1) = X0 \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (r1_xboole_0 X0 X1) \Leftrightarrow (k3_xboole_0 X0 X1 = k1_xboole_0) \quad (3)$$

Assume the following.

$$\forall X0. \forall X1. k3_xboole_0 X0 X1 = k3_xboole_0 X1 X0 \quad (4)$$

Assume the following.

$$\forall X0. \forall X1. k2_xboole_0 X0 X1 = k2_xboole_0 X1 X0 \quad (5)$$

Theorem 1

$$\forall X0. \forall X1. \forall X2. \forall X3. ((k2_xboole_0 X0 X1 = k2_xboole_0 X2 X3) \wedge ((r1_xboole_0 X2 X0) \wedge (r1_xboole_0 X3 X1))) \Rightarrow (X2 = X1)$$