t84_xboole_1 (TMGuXYpaQRNKTvyP-wjzqWh6xVVMgZW9EbTs)

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Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0.\forall X1.\forall X2.(\neg(\neg r1\_xboole\_0\ X0\ (k2\_xboole\_0\ X1\ X2))\wedge((r1\_xboole\_0\ X0\ X1)\wedge(r1\_xboole\_0\ X0\ X2)))\wedge(\neg(\neg(r1\_xboole\_0\ X0\ X1)\wedge(r1\_xboole\_0\ X0\ X2))\wedge(r1\_xboole\_0\ X0\ (k2\_xboole\_0\ X1\ X2))) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ (k4\_xboole\_0\ X1\ X0) = k2\_xboole\_0\ X0\ X1 \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.k2\_xboole\_0\ X0\ X1 = k2\_xboole\_0\ X1\ X0 \tag{3}$$

Theorem 1

$$\forall X0.\forall X1.\forall X2.\neg(\neg r1\_xboole\_0\ X0\ X1)\wedge((r1\_xboole\_0\ X0\ X2)\wedge(r1\_xboole\_0\ X0\ (k4\_xboole\_0\ X1\ X2)))$$