# l1_axioms (TMYi6WvcyiAnjVrmTuai4u8dw6JxFnogF9a)

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Let $v1\_xreal\_0 : \iota \Rightarrow o$ be given. Let $k2\_arytm\_2 : \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_arytm\_2 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_tarski : \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k4\_tarski : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11\_arytm\_3 : \iota$ be given. Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k2\_xxreal\_0 : \iota$ be given. Let $k1\_xxreal\_0 : \iota$ be given. Assume the following.

$$r1\_xboole\_0\ k2\_arytm\_2\ (k2\_zfmisc\_1\ (k1\_tarski\ k11\_arytm\_3)\ k2\_arytm\_2) \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.(\neg(\neg r1\_xboole\_0\ X0\ X1)\wedge(\forall X2.\neg(X2 \in X0)\wedge(X2 \in X1)))\wedge(\neg(\exists X2.(X2 \in X0)\wedge(X2 \in X1))\wedge(r1\_xboole\_0\ X0\ X1)) \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.(r1\_xboole\_0\ X0\ X1)\Rightarrow(r1\_xboole\_0\ X1\ X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0)\wedge(v1\_xxreal\_0\ X1))\Rightarrow(r1\_xxreal\_0\ X0\ X0) \tag{4}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{5}$$

Assume the following.

$$k11\_arytm\_3 = k1\_xboole\_0 \tag{6}$$

Assume the following.

$$\forall X0.(v1\_xxreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xxreal\_0\ X1)\Rightarrow((((X0 \in k2\_arytm\_2)\wedge(X1 \in k2\_arytm\_2))\Rightarrow((r1\_xxreal\_0\ X0\ X1)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ k2\_arytm\_2)\wedge(\exists X3.(m1\_subset\_1\ X3\ k2\_arytm\_2)\wedge((X0 = X2)\wedge((X1 = X3)\wedge(r1\_arytm\_2\ X2\ X3)))))))\wedge((((X0 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2)\wedge(X1 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2))\Rightarrow((r1\_xxreal\_0\ X0\ X1)\Leftrightarrow(\exists X2.(m1\_subset\_1\ X2\ k2\_arytm\_2)\wedge(\exists X3.(m1\_subset\_1\ X3\ k2\_arytm\_2)\wedge((X0 = k4\_tarski\ k6\_numbers\ X2)\wedge((X1 = k4\_tarski\ k6\_numbers\ X3)\wedge(r1\_arytm\_2\ X3\ X2)))))))\wedge(\neg(\neg(X0 \in k2\_arytm\_2)\wedge(X1 \in k2\_arytm\_2))\wedge((\neg(X0 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2)\wedge(X1 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2))\wedge(\neg(r1\_xxreal\_0\ X0\ X1)\Leftrightarrow(\neg(\neg(X1 \in k2\_arytm\_2)\wedge(X0 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2))\wedge((X0 \neq k2\_xxreal\_0)\wedge(X1 \neq k1\_xxreal\_0))))))))) \tag{7}$$

Assume the following.

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(v1\_xxreal\_0\ X0) \tag{8}$$

**Theorem 1**

$$\forall X0.(v1\_xreal\_0\ X0)\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow((\neg(\neg(X0 \in k2\_arytm\_2)\wedge((X1 \in k2\_arytm\_2)\wedge(\exists X2.(m1\_subset\_1\ X2\ k2\_arytm\_2)\wedge(\exists X3.(m1\_subset\_1\ X3\ k2\_arytm\_2)\wedge((X0 = X2)\wedge((X1 = X3)\wedge(r1\_arytm\_2\ X2\ X3)))))))\wedge((\neg(X0 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2)\wedge((X1 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2)\wedge(\exists X2.(m1\_subset\_1\ X2\ k2\_arytm\_2)\wedge(\exists X3.(m1\_subset\_1\ X3\ k2\_arytm\_2)\wedge((X0 = k4\_tarski\ k6\_numbers\ X2)\wedge((X1 = k4\_tarski\ k6\_numbers\ X3)\wedge(r1\_arytm\_2\ X3\ X2)))))))\wedge(\neg(X1 \in k2\_arytm\_2)\wedge(X0 \in k2\_zfmisc\_1\ (k1\_tarski\ k6\_numbers)\ k2\_arytm\_2))))\Rightarrow(r1\_xxreal\_0\ X0\ X1)))$$