# t7_binari_4 (TMQ8Q9sFz8XXCYZb2HZh4w1NxhW5qqEzwJS)

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Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v7\_ordinal1 : \iota \Rightarrow o$ be given. Let $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6\_margrel1 : \iota$ be given. Let $k5\_euclid : \iota \Rightarrow \iota$ be given. Let $k3\_binari\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6\_numbers : \iota$ be given. Let $k1\_xboole\_0 : \iota$ be given. Let $k6\_binarith : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $np\_\_1 : \iota$ be given. Let $k3\_finseq\_1 : \iota \Rightarrow \iota$ be given. Let $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xxreal\_0 : \iota \Rightarrow o$ be given. Let $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k7\_margrel1 : \iota$ be given. Let $k1\_xboolean : \iota$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4\_euclid : \iota \Rightarrow \iota$ be given. Let $v1\_relat\_1 : \iota \Rightarrow o$ be given. Let $v1\_funct\_1 : \iota \Rightarrow o$ be given. Let $v1\_finseq\_1 : \iota \Rightarrow o$ be given. Let $k1\_card\_1 : \iota \Rightarrow \iota$ be given. Let $v3\_relat\_1 : \iota \Rightarrow o$ be given. Let $k1\_numbers : \iota$ be given. Let $v1\_card\_1 : \iota \Rightarrow o$ be given. Let $k1\_zfmisc\_1 : \iota \Rightarrow \iota$ be given. Let $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5\_numbers : \iota$ be given. Let $v3\_valued\_0 : \iota \Rightarrow o$ be given. Let $k21\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5\_series\_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np\_\_2 : \iota$ be given. Let $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{1}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0\ X0) \wedge (v7\_ordinal1\ X0)) \Rightarrow (\forall X1.\ ((v3\_card\_1\ X1\ X0) \wedge (m2\_finseq\_1\ X1\ k6\_margrel1)) \Rightarrow ((X1 = k5\_euclid\ X0) \Rightarrow (k6\_binarith\ X0\ X1 = k6\_numbers))) \tag{2}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.\forall X2.(m2\_finseq\_1\ X2\ X1) \Rightarrow (((r1\_xxreal\_0\ np\_\_1\ X0) \wedge (r1\_xxreal\_0\ X0\ (k3\_finseq\_1\ X2))) \Rightarrow (k7\_partfun1\ X1\ X2\ X0 = k1\_funct\_1\ X2\ X0))) \tag{3}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow ((\neg r1\_xxreal\_0\ np\_\_1\ X0) \Rightarrow (X0 = k6\_numbers)) \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xxreal\_0\ X0)\wedge(v1\_xxreal\_0\ X1))\Rightarrow(r1\_xxreal\_0\ X0\ X0) \tag{5}$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1\ X1\ X0)\Leftrightarrow(m1\_finseq\_1\ X1\ X0) \tag{6}$$

Assume the following.

$$k7\_margrel1 = k1\_xboolean \tag{7}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{8}$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0\ X0)\wedge((v7\_ordinal1\ X1)\wedge(m1\_subset\_1\ X2\ X0)))\Rightarrow(k5\_finseq\_2\ X0\ X1\ X2 = k2\_finseq\_2\ X1\ X2) \tag{9}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(k5\_euclid\ X0 = k4\_euclid\ X0) \tag{10}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow(k3\_finseq\_1\ X0 = k1\_card\_1\ X0) \tag{11}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((v1\_relat\_1\ (k2\_finseq\_2\ X0\ k6\_numbers))\wedge((v3\_relat\_1\ (k2\_finseq\_2\ X0\ k6\_numbers))\wedge((v1\_funct\_1\ (k2\_finseq\_2\ X0\ k6\_numbers))\wedge(v1\_finseq\_1\ (k2\_finseq\_2\ X0\ k6\_numbers))))) \tag{12}$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \tag{13}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow((v1\_xboole\_0\ (k1\_card\_1\ X0))\wedge(v1\_card\_1\ (k1\_card\_1\ X0))) \tag{14}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1\ X0)\wedge((v3\_relat\_1\ X0)\wedge(v1\_funct\_1\ X0)))\Rightarrow(v1\_xboole\_0\ (k1\_funct\_1\ X0\ X1)) \tag{15}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0)\wedge((\neg v1\_xboole\_0\ X1)\wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ X0))))\Rightarrow(\forall X2.(m2\_subset\_1\ X2\ X0\ X1)\Rightarrow(m1\_subset\_1\ X2\ X0)) \tag{16}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge((v3\_card\_1\ X1\ X0)\wedge( m1\_finseq\_1\ X1\ k6\_margrel1)))\Rightarrow(m2\_subset\_1\ (k6\_binarith\ X0\ X1)\ k1\_numbers\ k5\_numbers) \tag{17}$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \tag{18}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((v1\_relat\_1\ (k4\_euclid\ X0))\wedge(( v1\_funct\_1\ (k4\_euclid\ X0))\wedge((v1\_finseq\_1\ (k4\_euclid\ X0))\wedge(v3\_valued\_0\ (k4\_euclid\ X0))))) \tag{19}$$

Assume the following.

$$\forall X0.\forall X1.(v3\_card\_1\ X1\ X0)\Leftrightarrow(k1\_card\_1\ X1 = X0) \tag{20}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(k4\_euclid\ X0 = k5\_finseq\_2\ k1\_numbers\ X0\ k6\_numbers) \tag{21}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(\forall X1.((v3\_card\_1\ X1\ X0)\wedge( m2\_finseq\_1\ X1\ k6\_margrel1))\Rightarrow(((k7\_partfun1\ k6\_margrel1\ X1\ X0 = k7\_margrel1)\Rightarrow(k3\_binari\_2\ X0\ X1 = k6\_binarith\ X0\ X1))\wedge((k7\_partfun1\ k6\_margrel1\ X1\ X0\neq k7\_margrel1)\Rightarrow(k3\_binari\_2\ X0\ X1 = k21\_binop\_2\ (k6\_binarith\ X0\ X1)\ (k5\_series\_1\ np\_\_2\ X0))))) \tag{22}$$

Assume the following.

$$k1\_xboolean = k6\_numbers \tag{23}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0)\Rightarrow(\forall X1.((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0))\Rightarrow((v1\_xboole\_0\ X1)\wedge((v1\_relat\_1\ X1)\wedge(v4\_relat\_1\ X1\ X0)))) \tag{24}$$

Assume the following.

$$\forall X0.((v1\_relat\_1\ X0)\wedge((v1\_funct\_1\ X0)\wedge(v1\_finseq\_1\ X0)))\Rightarrow ((v1\_relat\_1\ X0)\wedge((v4\_relat\_1\ X0\ k5\_numbers)\wedge((v1\_funct\_1\ X0)\wedge (v1\_finseq\_1\ X0)))) \tag{25}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v1\_xxreal\_0\ X0) \tag{26}$$

**Theorem 1**

$$\forall X0.((\neg v1\_xboole\_0\ X0)\wedge(v7\_ordinal1\ X0))\Rightarrow(\forall X1. ((v3\_card\_1\ X1\ X0)\wedge(m2\_finseq\_1\ X1\ k6\_margrel1))\Rightarrow((X1 = k5\_euclid\ X0)\Rightarrow(k3\_binari\_2\ X0\ X1 = k6\_numbers)))$$