

# t12\_pdiff\_8 (TMXRZp- nAz6L6Ykn9oHbQkuSbrW62bheL7Xx)

October 27, 2020

Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k4\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_rvsum\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k45\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (v7\_ordinal1 X1) \Rightarrow (\forall X2. (m2\_finseq\_2 \\ & X2 k1\_numbers (k4\_finseq\_2 X1 k1\_numbers)) \Rightarrow (\forall X3. (m2\_finseq\_2 \\ & X3 k1\_numbers (k4\_finseq\_2 X1 k1\_numbers)) \Rightarrow (k1\_seq\_1 (k9\_rvsum\_1 \\ & X1 X2 X3) X0 = k10\_binop\_2 (k1\_seq\_1 X2 X0) (k1\_seq\_1 X3 X0)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. (m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2. (m2\_finseq\_2 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v7\_ordinal1 X0) \wedge ((m1\_subset\_1 \\ & X1 (k4\_finseq\_2 X0 k1\_numbers)) \wedge (m1\_subset\_1 X2 (k4\_finseq\_2 \\ & X0 k1\_numbers)))) \Rightarrow (k9\_rvsum\_1 X0 X1 X2 = k45\_valued\_1 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge((m1\_subset\_1\ X1\ (k1\_euclid\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_euclid\ X0))))\Rightarrow(k8\_euclid\ X0\ X1\ X2 = k45\_valued\_1\ X1\ X2) \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1)\wedge(v3\_ordinal1\ k4\_ordinal1) \quad (7)$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((v7\_ordinal1\ X0)\wedge((m1\_subset\_1\ X1\ (k1\_euclid\ X0))\wedge(m1\_subset\_1\ X2\ (k1\_euclid\ X0))))\Rightarrow(m2\_finseq\_2\ (k8\_euclid\ X0\ X1\ X2)\ k1\_numbers\ (k1\_euclid\ X0)) \quad (9)$$

Assume the following.

$$m1\_subset\_1\ k5\_numbers\ (k1\_zfmisc\_1\ k1\_numbers) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(v7\_ordinal1\ X1))\Rightarrow((v1\_funct\_1\ (k1\_pdiff\_1\ X0\ X1))\wedge((v1\_funct\_2\ (k1\_pdiff\_1\ X0\ X1)\ (k1\_euclid\ X1)\ k1\_numbers)\wedge(m1\_subset\_1\ (k1\_pdiff\_1\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X1)\ k1\_numbers)))))) \quad (11)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(m1\_finseq\_2\ (k1\_euclid\ X0)\ k1\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow((\forall X1.(v7\_ordinal1\ X1)\Rightarrow((\forall X2.((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ (k1\_euclid\ X1)\ k1\_numbers)\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k1\_euclid\ X1)\ k1\_numbers))))))\Rightarrow((X2 = k1\_pdiff\_1\ X0\ X1)\Leftrightarrow(\forall X3.(m2\_finseq\_2\ X3\ k1\_numbers\ (k1\_euclid\ X1))\Rightarrow(k1\_seq\_1\ X2\ X3 = k1\_seq\_1\ X3\ X0)))))) \quad (13)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(k1\_euclid\ X0 = k4\_finseq\_2\ X0\ k1\_numbers) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1)\Rightarrow(v7\_ordinal1\ X0) \quad (15)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0) \wedge (m2\_subset\_1 X0 k1\_numbers k5\_numbers)) \Rightarrow \\ (\forall X1.(m2\_finseq\_2 X1 k1\_numbers (k1\_euclid X0)) \Rightarrow (\forall X2. \\ (m2\_finseq\_2 X2 k1\_numbers (k1\_euclid X0)) \Rightarrow (\forall X3.(m2\_subset\_1 \\ X3 k1\_numbers k5\_numbers) \Rightarrow (k1\_seq\_1 (k1\_pdiff\_1 X3 X0) (k8\_euclid \\ X0 X1 X2) = k10\_binop\_2 (k1\_seq\_1 (k1\_pdiff\_1 X3 X0) X1) (k1\_seq\_1 \\ (k1\_pdiff\_1 X3 X0) X2)))))) \end{aligned}$$