

## t14\_pdiff\_2

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_pdiff\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k19\_euclid : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k15\_euclid : \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & (k1\_relset\_1 (k1\_euclid np\_2) (k1\_pdiff\_1 np\_2 np\_2) = k1\_euclid \\
 & np\_2) \wedge ((k2\_relset\_1 k1\_numbers (k1\_pdiff\_1 np\_2 np\_2) = k1\_numbers) \wedge \\
 & (\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & X1 k1\_numbers) \Rightarrow (k1\_seq\_1 (k1\_pdiff\_1 np\_2 np\_2) (k10\_finseq\_1 \\
 & X0 X1) = X1))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\
 & ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers))
 \end{aligned} \tag{2}$$

Assume the following.

$$\neg v1\_xboole\_0 np\_2 \tag{3}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{4}$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(k19\_euclid X0 X1 = k10\_finseq\_1 X0 X1) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((\neg v1\_xboole\_0 \\ & X0)\wedge(m1\_subset\_1 X0 k5\_numbers))\wedge((m1\_subset\_1 X1 k5\_numbers)\wedge \\ & (((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & (k1\_euclid X0) k1\_numbers))))\wedge(m1\_subset\_1 X3 (k1\_euclid X0))))))\Rightarrow \\ & (k11\_pdiff\_1 X0 X1 X2 X3 = k10\_pdiff\_1 X0 X1 X2 X3) \end{aligned} \quad (6)$$

Assume the following.

$$u1\_struct\_0 (k15\_euclid np\_2) = k1\_euclid np\_2 \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 X0)\wedge(v1\_xreal\_0 X1))\Rightarrow(m1\_subset\_1 (k19\_euclid X0 X1) (u1\_struct\_0 (k15\_euclid np\_2))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.k10\_finseq\_1 X0 X1 = k7\_finseq\_1 (k9\_finseq\_1 X0) (k9\_finseq\_1 X1) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers)\Rightarrow(\forall X1. \\ & (m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow(\forall X2.((v1\_funct\_1 \\ & X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid X0) \\ & k1\_numbers))))\Rightarrow(\forall X3.(m2\_finseq\_2 X3 k1\_numbers (k1\_euclid \\ & X0))\Rightarrow(k1\_pdiff\_2 X0 X1 X2 X3 = k1\_partfun1 k1\_numbers (k1\_euclid \\ & X0) (k1\_euclid X0) k1\_numbers (k6\_pdiff\_1 X0 X1 X3) X2)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0)\wedge(m2\_subset\_1 X0 k1\_numbers k5\_numbers))\Rightarrow \\ & (\forall X1.(m2\_subset\_1 X1 k1\_numbers k5\_numbers)\Rightarrow(\forall X2. \\ & ((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 ( \\ & k1\_euclid X0) k1\_numbers))))\Rightarrow(\forall X3.(m2\_finseq\_2 X3 k1\_numbers \\ & (k1\_euclid X0))\Rightarrow(k10\_pdiff\_1 X0 X1 X2 X3 = k1\_fdiff\_1 (k1\_partfun1 \\ & k1\_numbers (k1\_euclid X0) (k1\_euclid X0) k1\_numbers (k6\_pdiff\_1 \\ & X0 X1 X3) X2) (k1\_seq\_1 (k1\_pdiff\_1 X1 X0) X3)))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (12)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k1\_numbers) \Rightarrow (\forall X2.(m2\_finseq\_2 X2 k1\_numbers (k1\_euclid \\ & np\_2)) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k1\_euclid np\_2) k1\_numbers)))) \Rightarrow (((X2 = k10\_finseq\_1 \\ & X0 X1) \wedge (r3\_pdf\_1 np\_2 np\_2 X3 X2)) \Rightarrow (k11\_pdf\_1 np\_2 np\_2 \\ & X3 X2 = k1\_diff\_1 (k1\_pdf\_2 np\_2 np\_2 X3 X2) X1)))))) \end{aligned}$$