

## t5\_pdiff\_4

(TMTcf8iyGaAwYgKfj5X5H8VztxYbfLJA vUv)

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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  $np\_3 : \iota$  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  $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $np\_2 : \iota$  be given. Let  $r1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $k1\_rvsum\_1 : \iota \Rightarrow \iota$  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  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & (k1\_relset\_1 (k1\_euclid np\_3) (k1\_pdiff\_1 np\_2 np\_3) = k1\_euclid \\
 & \quad np\_3) \wedge ((k1\_rvsum\_1 (k1\_pdiff\_1 np\_2 np\_3) = k1\_numbers) \wedge \\
 & \quad \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & \quad X1 k1\_numbers) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (k1\_seq\_1 \\
 & \quad (k1\_pdiff\_1 np\_2 np\_3) (k11\_finseq\_1 X0 X1 X2) = X1)))) \tag{1}
 \end{aligned}$$

Assume the following.

$$\begin{aligned}
 & ((v2\_xxreal\_0 np\_3) \wedge (m2\_subset\_1 np\_3 k1\_numbers k5\_numbers)) \wedge \\
 & ((m1\_subset\_1 np\_3 k5\_numbers) \wedge (m1\_subset\_1 np\_3 k1\_numbers)) \tag{2}
 \end{aligned}$$

Assume the following.

$$\neg v1\_xboole\_0 np\_3 \tag{3}$$

Assume the following.

$$\begin{aligned}
 & ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\
 & ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \tag{4}
 \end{aligned}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
& (m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow (\forall X2. ((v1\_funct\_1 \\
& X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid X0) \\
& k1\_numbers)))) \Rightarrow (\forall X3. (m2\_finseq\_2 X3 k1\_numbers (k1\_euclid \\
& X0)) \Rightarrow (k1\_pdiff\_2 X0 X1 X2 X3 = k1\_partfun1 k1\_numbers (k1\_euclid \\
& X0) (k1\_euclid X0) k1\_numbers (k6\_pdiff\_1 X0 X1 X3) X2))))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1\_xboole\_0 X0) \wedge (m2\_subset\_1 X0 k1\_numbers k5\_numbers)) \Rightarrow \\
& (\forall X1. (m2\_subset\_1 X1 k1\_numbers k5\_numbers) \Rightarrow (\forall X2. \\
& ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 ( \\
& k1\_euclid X0) k1\_numbers)))) \Rightarrow (\forall X3. (m2\_finseq\_2 X3 k1\_numbers \\
& (k1\_euclid X0)) \Rightarrow ((r3\_pdiff\_1 X0 X1 X2 X3) \Leftrightarrow (r1\_fdiff\_1 (k1\_partfun1 \\
& k1\_numbers (k1\_euclid X0) (k1\_euclid X0) k1\_numbers (k6\_pdiff\_1 \\
& X0 X1 X3) X2) (k1\_seq\_1 (k1\_pdiff\_1 X1 X0) X3))))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k1\_numbers) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\forall X3. \\
& (m2\_finseq\_2 X3 k1\_numbers (k1\_euclid np\_3)) \Rightarrow (\forall X4. (( \\
& v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid \\
& np\_3) k1\_numbers)))) \Rightarrow (((X3 = k11\_finseq\_1 X0 X1 X2) \wedge (r3\_pdiff\_1 \\
& np\_3 np\_2 X4 X3)) \Rightarrow (r1\_fdiff\_1 (k1\_pdiff\_2 np\_3 np\_2 X4 X3) X1))))))
\end{aligned}$$