

## t38\_pdiff\_3

(TMbT1ieSMJ88vAUadP69mRN3repM2kRLF9u)

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Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r2\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_fcont\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_pdiff\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  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  $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} \forall X0. ((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ (k1\_euclid np\_2) k1\_numbers)))) \Rightarrow (\forall X1. (m2\_finseq\_2 X1 \\ k1\_numbers (k1\_euclid np\_2)) \Rightarrow ((r3\_pdiff\_1 np\_2 np\_2 X0 X1) \Rightarrow \\ (r1\_fcont\_1 (k1\_pdiff\_2 np\_2 np\_2 X0 X1) (k1\_seq\_1 (k1\_pdiff\_1 \\ np\_2 np\_2) X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} \forall X0. (m2\_finseq\_2 X0 k1\_numbers (k1\_euclid np\_2)) \Rightarrow (\forall X1. \\ ((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 ( \\ k1\_euclid np\_2) k1\_numbers)))) \Rightarrow ((r2\_pdiff\_3 X1 X0) \Leftrightarrow (r3\_pdiff\_1 \\ np\_2 np\_2 (k1\_pdiff\_3 np\_1 np\_2 X1) X0))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\ ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \end{aligned} \quad (3)$$

Assume the following.

$$\neg v1\_xboole\_0 np\_2 \quad (4)$$

Assume the following.

$$\begin{aligned} ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((m1\_subset\_1 X0 k5\_numbers)\wedge \\
& (((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 k5\_numbers))\wedge((v1\_funct\_1 \\
& X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid X1) \\
& k1\_numbers))))))\Rightarrow((v1\_funct\_1 (k1\_pdiff\_3 X0 X1 X2))\wedge((v1\_funct\_2 \\
& (k1\_pdiff\_3 X0 X1 X2) (k1\_euclid X1) k1\_numbers)\wedge(m1\_subset\_1 \\
& (k1\_pdiff\_3 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid X1) \\
& k1\_numbers))))))
\end{aligned} \tag{6}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (k1\_euclid np\_2) k1\_numbers))))\Rightarrow(\forall X1.(m2\_finseq\_2 X1 \\
& k1\_numbers (k1\_euclid np\_2))\Rightarrow((r2\_pdiff\_3 X0 X1)\Rightarrow(r1\_fcont\_1 \\
& (k1\_pdiff\_2 np\_2 np\_2 (k1\_pdiff\_3 np\_1 np\_2 X0) X1) (k1\_seq\_1 \\
& (k1\_pdiff\_1 np\_2 np\_2) X1))))
\end{aligned}$$