

t17\_pdiff\_2 (TM-  
NYna21fKUu3NWsLfYapRQQUgNRK1GekrR)

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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  $m1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $np\_1 : \iota$  be given. Let  $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_pdiff\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $v3\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_comseq\_2 : \iota \Rightarrow o$  be given. Let  $k20\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k37\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k47\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_seq\_2 : \iota \Rightarrow \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_fdiff\_1 : \iota \Rightarrow o$  be given. Let  $v2\_fdiff\_1 : \iota \Rightarrow o$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  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  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let

$v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad (k1\_euclid\ np\_2) k1\_numbers)))) \Rightarrow (\forall X1.(m2\_finseq\_2 X1 \\
& \quad k1\_numbers (k1\_euclid\ np\_2)) \Rightarrow ((r3\_pdiff\_1\ np\_2\ np\_1\ X0\ X1) \Leftrightarrow \\
& \quad (\exists X2.(m1\_subset\_1\ X2\ k1\_numbers) \wedge (\exists X3.(m1\_subset\_1 \\
& \quad X3\ k1\_numbers) \wedge ((X1 = k10\_finseq\_1\ X2\ X3) \wedge (\exists X4.(m1\_rcomp\_1 \\
& \quad X4\ X2) \wedge (r1\_tarski\ X4\ (k1\_relset\_1\ k1\_numbers\ (k1\_pdiff\_2\ np\_2 \\
& \quad np\_1\ X0\ X1)))) \wedge (\exists X5.((v1\_funct\_1\ X5) \wedge ((v3\_fdiff\_1\ X5) \wedge \\
& \quad (m1\_subset\_1\ X5\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))))) \wedge \\
& \quad (\exists X6.((v1\_funct\_1\ X6) \wedge ((v2\_fdiff\_1\ X6) \wedge (m1\_subset\_1 \\
& \quad X6\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))))) \wedge (\forall X7. \\
& \quad (m1\_subset\_1\ X7\ k1\_numbers) \Rightarrow ((X7 \in X4) \Rightarrow (k9\_real\_1\ (k1\_seq\_1\ ( \\
& \quad k1\_pdiff\_2\ np\_2\ np\_1\ X0\ X1)\ X7)\ (k1\_seq\_1\ (k1\_pdiff\_2\ np\_2\ np\_1 \\
& \quad X0\ X1)\ X2) = k7\_real\_1\ (k1\_seq\_1\ X5\ (k9\_real\_1\ X7\ X2))\ (k1\_seq\_1\ X6 \\
& \quad (k9\_real\_1\ X7\ X2))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad (k1\_euclid\ np\_2) k1\_numbers)))) \Rightarrow (\forall X1.(m2\_finseq\_2 X1 \\
& \quad k1\_numbers (k1\_euclid\ np\_2)) \Rightarrow ((\exists X2.(m1\_subset\_1\ X2\ k1\_numbers) \wedge \\
& \quad (\exists X3.(m1\_subset\_1\ X3\ k1\_numbers) \wedge ((X1 = k10\_finseq\_1\ X2 \\
& \quad X3) \wedge (r1\_fdiff\_1\ (k1\_pdiff\_2\ np\_2\ np\_1\ X0\ X1)\ X2)))) \Leftrightarrow (r3\_pdiff\_1 \\
& \quad np\_2\ np\_1\ X0\ X1)))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.((v2\_relat\_1 \\
& \quad X1) \wedge ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 k5\_numbers k1\_numbers) \wedge \\
& \quad ((v1\_fdiff\_1 X1 k6\_numbers) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k5\_numbers k1\_numbers)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge \\
& \quad ((v3\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 \\
& \quad X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow (( \\
& \quad k2\_relset\_1 k1\_numbers X2 = k1\_tarski X0) \Rightarrow ((v2\_comseq\_2 X2) \wedge ( \\
& \quad (k2\_seq\_2 X2 = X0) \wedge ((v2\_comseq\_2 (k3\_valued\_1 k5\_numbers k1\_numbers \\
& \quad k1\_numbers X1 X2)) \wedge (k2\_seq\_2 (k3\_valued\_1 k5\_numbers k1\_numbers \\
& \quad k1\_numbers X1 X2) = X0))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& (k1\_relset\_1 (k1\_euclid\ np\_2) (k1\_pdiff\_1\ np\_1\ np\_2) = k1\_euclid \\
& \quad np\_2) \wedge ((k2\_relset\_1 k1\_numbers (k1\_pdiff\_1\ np\_1\ np\_2) = k1\_numbers) \wedge \\
& \quad (\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& \quad X1 k1\_numbers) \Rightarrow (k1\_seq\_1 (k1\_pdiff\_1\ np\_1\ np\_2) (k10\_finseq\_1 \\
& \quad X0\ X1) = X0))))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} & \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ & X1 k1\_numbers) \Rightarrow (\forall X2.(m2\_finseq\_2 X2 k1\_numbers (k1\_euclid \\ & np\_2)) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k1\_euclid np\_2) k1\_numbers)))) \Rightarrow (((X2 = k10\_finseq\_1 \\ & X0 X1) \wedge (r3\_pdfiff\_1 np\_2 np\_1 X3 X2)) \Rightarrow (k11\_pdfiff\_1 np\_2 np\_1 \\ & X3 X2 = k1\_fdiff\_1 (k1\_pdfiff\_2 np\_2 np\_1 X3 X2) X0)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow (\forall X2. \\ & (m1\_rcomp\_1 X2 X1) \Rightarrow (((r1\_fdiff\_1 X0 X1) \wedge (r1\_tarski X2 (k1\_relset\_1 \\ & k1\_numbers X0))) \Rightarrow (\forall X3.((v2\_relat\_1 X3) \wedge ((v1\_funct\_1 \\ & X3) \wedge ((v1\_funct\_2 X3 k5\_numbers k1\_numbers) \wedge ((v1\_fdiff\_1 X3 k6\_numbers) \wedge \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow \\ & (\forall X4.((v1\_funct\_1 X4) \wedge ((v3\_funct\_1 X4) \wedge ((v1\_funct\_2 \\ & X4 k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers k1\_numbers)))))) \Rightarrow (((k2\_relset\_1 k1\_numbers X4 = k1\_tarski \\ & X1) \wedge (r1\_tarski (k2\_relset\_1 k1\_numbers (k3\_valued\_1 k5\_numbers \\ & k1\_numbers k1\_numbers X3 X4)) X2)) \Rightarrow ((v2\_comseq\_2 (k20\_valued\_1 \\ & k5\_numbers k1\_numbers k1\_numbers (k37\_valued\_1 k5\_numbers k1\_numbers \\ & X3) (k47\_valued\_1 k5\_numbers k1\_numbers k1\_numbers (k8\_funct\_2 \\ & k5\_numbers k1\_numbers k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers \\ & k1\_numbers X3 X4) X0) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\ & X4 X0)))) \wedge (k1\_fdiff\_1 X0 X1 = k2\_seq\_2 (k20\_valued\_1 k5\_numbers \\ & k1\_numbers k1\_numbers (k37\_valued\_1 k5\_numbers k1\_numbers X3) \\ & (k47\_valued\_1 k5\_numbers k1\_numbers k1\_numbers (k8\_funct\_2 k5\_numbers \\ & k1\_numbers k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers \\ & X3 X4) X0) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers X4 X0))))))))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_2) \wedge (m2\_subset\_1 np\_2 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_2 k5\_numbers) \wedge (m1\_subset\_1 np\_2 k1\_numbers)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_1) \wedge (m2\_subset\_1 np\_1 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_1 k5\_numbers) \wedge (m1\_subset\_1 np\_1 k1\_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1.(m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2.(m2\_finseq\_2 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (9)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((m1\_subset\_1 X0 \\ & k5\_numbers)\wedge((m1\_subset\_1 X1 k5\_numbers)\wedge(((v1\_funct\_1 X2)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid X0) k1\_numbers))))\wedge \\ & (m1\_subset\_1 X3 (k1\_euclid X0))))\Rightarrow((v1\_funct\_1 (k1\_pdiff\_2 \\ & X0 X1 X2 X3))\wedge(m1\_subset\_1 (k1\_pdiff\_2 X0 X1 X2 X3) (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \end{aligned} \quad (11)$$

Assume the following.

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

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1)\Rightarrow(v7\_ordinal1 X0) \quad (13)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (14)$$

**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(\forall X2.(m1\_rcomp\_1 X2 (k1\_seq\_1 \\ & (k1\_pdiff\_1 np\_1 np\_2) X1))\Rightarrow(((r3\_pdiff\_1 np\_2 np\_1 X0 X1)\wedge \\ & (r1\_tarski X2 (k1\_relset\_1 k1\_numbers (k1\_pdiff\_2 np\_2 np\_1 \\ & X0 X1))))\Rightarrow(\forall X3.(((v2\_relat\_1 X3)\wedge((v1\_funct\_1 X3)\wedge((v1\_funct\_2 \\ & X3 k5\_numbers k1\_numbers)\wedge((v1\_fdiff\_1 X3 k6\_numbers)\wedge(m1\_subset\_1 \\ & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers))))))))\Rightarrow( \\ & \forall X4.(((v1\_funct\_1 X4)\wedge((v3\_funct\_1 X4)\wedge((v1\_funct\_2 X4 \\ & k5\_numbers k1\_numbers)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k5\_numbers k1\_numbers))))))\Rightarrow(((k2\_relset\_1 k1\_numbers X4 = k1\_tarski \\ & (k1\_seq\_1 (k1\_pdiff\_1 np\_1 np\_2) X1))\wedge(r1\_tarski (k2\_relset\_1 \\ & k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4)) \\ & X2))\Rightarrow((v2\_comseq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers k1\_numbers \\ & (k37\_valued\_1 k5\_numbers k1\_numbers X3) (k47\_valued\_1 k5\_numbers \\ & k1\_numbers k1\_numbers (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\ & (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4) (k1\_pdiff\_2 \\ & np\_2 np\_1 X0 X1)) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\ & X4 (k1\_pdiff\_2 np\_2 np\_1 X0 X1))))\wedge(k11\_pdiff\_1 np\_2 np\_1 \\ & X0 X1 = k2\_seq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers k1\_numbers \\ & (k37\_valued\_1 k5\_numbers k1\_numbers X3) (k47\_valued\_1 k5\_numbers \\ & k1\_numbers k1\_numbers (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\ & (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4) (k1\_pdiff\_2 \\ & np\_2 np\_1 X0 X1)) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\ & X4 (k1\_pdiff\_2 np\_2 np\_1 X0 X1)))))))))) \end{aligned}$$