

## l17\_pdiff\_4

(TMc2sHgAdf2DwvGHcK1J14xF3DVbEKdhDQ8)

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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  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_pdiff\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_fdiff\_1 : \iota \Rightarrow o$  be given. Let  $v2\_fdiff\_1 : \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  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  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (k11\_finseq\_1 X0 X1 X2 = k11\_finseq\_1 X3 X4 X5) \Rightarrow ((X0 = X3) \wedge ((X1 = X4) \wedge \\ & \quad (X2 = X5))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0. (m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1. (m1\_subset\_1 \\ & \quad X1 k1\_numbers) \Rightarrow (\forall X2. (m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\forall X3. \\ & \quad (m2\_finseq\_2 X3 k1\_numbers (k1\_euclid np\_3)) \Rightarrow (\forall X4. (( \\ & \quad v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid \\ & \quad np\_3) k1\_numbers)))) \Rightarrow (((X3 = k11\_finseq\_1 X0 X1 X2) \wedge (r3\_pdiff\_1 \\ & \quad np\_3 np\_2 X4 X3)) \Rightarrow (r1\_fdiff\_1 (k1\_pdiff\_2 np\_3 np\_2 X4 X3) X1)))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 np\_3) \wedge (m2\_subset\_1 np\_3 k1\_numbers k5\_numbers)) \wedge \\ & ((m1\_subset\_1 np\_3 k5\_numbers) \wedge (m1\_subset\_1 np\_3 k1\_numbers)) \end{aligned} \tag{3}$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1\_finseq\_2 \ X1 \ X0) \Rightarrow (\forall X2. (m2\_finseq\_2 \\ X2 \ X0 \ X1) \Leftrightarrow (m1\_subset\_1 \ X2 \ X1)) \end{aligned} \quad (5)$$

Assume the following.

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

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 \ X0 \\ k5\_numbers) \wedge ((m1\_subset\_1 \ X1 \ k5\_numbers) \wedge ((v1\_funct\_1 \ X2) \wedge \\ (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k1\_euclid \ X0) \ k1\_numbers)))) \wedge \\ (m1\_subset\_1 \ X3 \ (k1\_euclid \ X0)))) \Rightarrow ((v1\_funct\_1 \ (k1\_pdiff\_2 \\ X0 \ X1 \ X2 \ X3)) \wedge (m1\_subset\_1 \ (k1\_pdiff\_2 \ X0 \ X1 \ X2 \ X3) \ (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers)))) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 \ X0) \Rightarrow (m1\_finseq\_2 \ (k1\_euclid \ X0) \ k1\_numbers) \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. ((v1\_funct\_1 \ X0) \wedge (m1\_subset\_1 \ X0 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \\ k1\_numbers \ k1\_numbers)))) \Rightarrow (\forall X1. (v1\_xreal\_0 \ X1) \Rightarrow ((r1\_fdiff\_1 \\ X0 \ X1) \Rightarrow (\forall X2. (m1\_subset\_1 \ X2 \ k1\_numbers) \Rightarrow ((X2 = k1\_fdiff\_1 \\ X0 \ X1) \Leftrightarrow (\exists X3. (m1\_rcomp\_1 \ X3 \ X1) \wedge (r1\_tarski \ X3 \ (k1\_relset\_1 \\ k1\_numbers \ X0)) \wedge (\exists X4. ((v1\_funct\_1 \ X4) \wedge ((v3\_fdiff\_1 \ X4) \wedge \\ (m1\_subset\_1 \ X4 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers)))) \wedge \\ (\exists X5. ((v1\_funct\_1 \ X5) \wedge ((v2\_fdiff\_1 \ X5) \wedge (m1\_subset\_1 \\ X5 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers)))) \wedge ((X2 = \\ k1\_seq\_1 \ X4 \ np\_1) \wedge (\forall X6. (m1\_subset\_1 \ X6 \ k1\_numbers) \Rightarrow ( \\ (X6 \in X3) \Rightarrow (k9\_real\_1 \ (k1\_seq\_1 \ X0 \ X6) \ (k1\_seq\_1 \ X0 \ X1) = k7\_real\_1 \\ (k1\_seq\_1 \ X4 \ (k9\_real\_1 \ X6 \ X1)) \ (k1\_seq\_1 \ X5 \ (k9\_real\_1 \ X6 \ X1)))))))))) \end{aligned} \quad (9)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k4\_ordinal1) \Rightarrow (v7\_ordinal1 \ X0) \quad (10)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (v1\_xreal\_0 \ X0) \quad (11)$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k1\_numbers) \Rightarrow (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\forall X4.(m2\_finseq\_2 X4 k1\_numbers \\
& (k1\_euclid np\_3)) \Rightarrow (\forall X5.((v1\_funct\_1 X5) \wedge (m1\_subset\_1 \\
& X5 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k1\_euclid np\_3) k1\_numbers)))) \Rightarrow \\
& (((X4 = k11\_finseq\_1 X0 X1 X2) \wedge (r3\_pdiff\_1 np\_3 np\_2 X5 X4)) \Rightarrow ( \\
& (X3 = k1\_fdiff\_1 (k1\_pdiff\_2 np\_3 np\_2 X5 X4) X1) \Leftrightarrow (\exists X6. \\
& (m1\_subset\_1 X6 k1\_numbers) \wedge (\exists X7.(m1\_subset\_1 X7 k1\_numbers) \wedge \\
& (\exists X8.(m1\_subset\_1 X8 k1\_numbers) \wedge ((X4 = k11\_finseq\_1 X6 \\
& X7 X8) \wedge (\exists X9.(m1\_rcomp\_1 X9 X7) \wedge ((r1\_tarski X9 (k1\_relset\_1 \\
& k1\_numbers (k1\_pdiff\_2 np\_3 np\_2 X5 X4))) \wedge (\exists X10.((v1\_funct\_1 \\
& X10) \wedge ((v3\_fdiff\_1 X10) \wedge (m1\_subset\_1 X10 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k1\_numbers k1\_numbers)))))) \wedge (\exists X11.((v1\_funct\_1 X11) \wedge \\
& ((v2\_fdiff\_1 X11) \wedge (m1\_subset\_1 X11 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k1\_numbers k1\_numbers)))))) \wedge ((X3 = k1\_seq\_1 X10 np\_1) \wedge (\forall X12. \\
& (m1\_subset\_1 X12 k1\_numbers) \Rightarrow ((X12 \in X9) \Rightarrow (k9\_real\_1 (k1\_seq\_1 \\
& (k1\_pdiff\_2 np\_3 np\_2 X5 X4) X12) (k1\_seq\_1 (k1\_pdiff\_2 np\_3 \\
& np\_2 X5 X4) X7) = k7\_real\_1 (k1\_seq\_1 X10 (k9\_real\_1 X12 X7)) (k1\_seq\_1 \\
& X11 (k9\_real\_1 X12 X7))))))))))))))))))
\end{aligned}$$