

## t22\_pdiff\_2 (TMLsPzPMpRYcd- Dca89Vz6hT4npbFYRPy9Zc)

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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  $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_fcont\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_pdiff\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v2\_xreal\_0 : \iota \Rightarrow o$  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. Assume the following.

$$\begin{aligned} \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ (k1\_euclid np\_2) k1\_numbers)))) \Rightarrow (\forall X1.(m2\_finseq\_2 X1 \\ k1\_numbers (k1\_euclid np\_2)) \Rightarrow ((\exists X2.(m1\_subset\_1 X2 k1\_numbers) \wedge \\ (\exists X3.(m1\_subset\_1 X3 k1\_numbers) \wedge ((X1 = k10\_finseq\_1 X2 \\ X3) \wedge (r1\_fdiff\_1 (k1\_pdiff\_2 np\_2 np\_2 X0 X1) X3)))) \Leftrightarrow (r3\_pdiff\_1 \\ np\_2 np\_2 X0 X1))) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} (k1\_relset\_1 (k1\_euclid np\_2) (k1\_pdiff\_1 np\_2 np\_2) = k1\_euclid \\ np\_2) \wedge ((k2\_relset\_1 k1\_numbers (k1\_pdiff\_1 np\_2 np\_2) = k1\_numbers) \wedge \\ (\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\ X1 k1\_numbers) \Rightarrow (k1\_seq\_1 (k1\_pdiff\_1 np\_2 np\_2) (k10\_finseq\_1 \\ X0 X1) = X1)))) \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.(v1\_xreal\_0 X1) \Rightarrow ((r1\_fdiff\_1 \\ X0 X1) \Rightarrow (r1\_fcont\_1 X0 X1))) \tag{3}$$

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.

$$\forall X0. (m1\_subset\_1 \ X0 \ k4\_ordinal1) \Rightarrow (v7\_ordinal1 \ X0) \quad (9)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (v1\_xreal\_0 \ X0) \quad (10)$$

**Theorem 1**

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