

# t20\_pdiff\_3 (TMVgX- cWEDG5fWDjFEFtidTbPfnBjQ7rynLi)

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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  $r4\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow o$  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  $k1\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  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  $k5\_pdiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_seq\_2 : \iota \Rightarrow \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r3\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_pdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v3\_card\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & X1 k1\_numbers) \Rightarrow (\forall X2.(m2\_finseq\_2 X2 k1\_numbers (k1\_euclid \\
 & np\_2)) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
 & (k2\_zfmisc\_1 (k1\_euclid np\_2) k1\_numbers)))) \Rightarrow (((X2 = k10\_finseq\_1 \\
 & X0 X1) \wedge (r4\_pdiff\_3 X3 X2)) \Rightarrow (k5\_pdiff\_3 X3 X2 = k1\_fdiff\_1 (k1\_pdiff\_2 \\
 & np\_2 np\_2 (k1\_pdiff\_3 np\_2 np\_2 X3) X2) X1))))))
 \end{aligned} \tag{1}$$

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 (\forall X2.(m1\_rcomp\_1 X2 (k1\_seq\_1 \\
& \quad (k1\_pdiff\_1 np\_2 np\_2) X1)) \Rightarrow (((r3\_pdiff\_1 np\_2 np\_2 X0 X1) \wedge \\
& \quad (r1\_tarski X2 (k1\_relset\_1 k1\_numbers (k1\_pdiff\_2 np\_2 np\_2 \\
& \quad X0 X1)))) \Rightarrow (\forall X3.((v2\_relat\_1 X3) \wedge ((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 \\
& \quad X3 k5\_numbers k1\_numbers) \wedge ((v1\_fdiff\_1 X3 k6\_numbers) \wedge (m1\_subset\_1 \\
& \quad X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers k1\_numbers)))))) \Rightarrow ( \\
& \quad \forall X4.((v1\_funct\_1 X4) \wedge ((v3\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 \\
& \quad k5\_numbers k1\_numbers) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k5\_numbers k1\_numbers)))))) \Rightarrow (((k2\_relset\_1 k1\_numbers X4 = k1\_tarski \\
& \quad (k1\_seq\_1 (k1\_pdiff\_1 np\_2 np\_2) X1)) \wedge (r1\_tarski (k2\_relset\_1 \\
& \quad k1\_numbers (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4)) \\
& \quad X2)) \Rightarrow ((v2\_comseq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers k1\_numbers \\
& \quad (k37\_valued\_1 k5\_numbers k1\_numbers X3) (k47\_valued\_1 k5\_numbers \\
& \quad k1\_numbers k1\_numbers (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\
& \quad (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4) (k1\_pdiff\_2 \\
& \quad np\_2 np\_2 X0 X1)) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\
& \quad X4 (k1\_pdiff\_2 np\_2 np\_2 X0 X1)))))) \wedge (k11\_pdiff\_1 np\_2 np\_2 \\
& \quad X0 X1 = k2\_seq\_2 (k20\_valued\_1 k5\_numbers k1\_numbers k1\_numbers \\
& \quad (k37\_valued\_1 k5\_numbers k1\_numbers X3) (k47\_valued\_1 k5\_numbers \\
& \quad k1\_numbers k1\_numbers (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\
& \quad (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4) (k1\_pdiff\_2 \\
& \quad np\_2 np\_2 X0 X1)) (k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers \\
& \quad X4 (k1\_pdiff\_2 np\_2 np\_2 X0 X1))))))))) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& \quad X1 k1\_numbers) \Rightarrow (\forall X2.(m2\_finseq\_2 X2 k1\_numbers (k1\_euclid \\
& \quad np\_2)) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 (k1\_euclid np\_2) k1\_numbers)))) \Rightarrow (((X2 = k10\_finseq\_1 \\
& \quad X0 X1) \wedge (r3\_pdiff\_1 np\_2 np\_2 X3 X2)) \Rightarrow (k11\_pdiff\_1 np\_2 np\_2 \\
& \quad X3 X2 = k1\_fdiff\_1 (k1\_pdiff\_2 np\_2 np\_2 X3 X2) X1)))))) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2\_finseq\_2 X0 k1\_numbers (k1\_euclid np\_2)) \Rightarrow (\forall X1. \\
& \quad ((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 ( \\
& \quad k1\_euclid np\_2) k1\_numbers)))) \Rightarrow ((r4\_pdiff\_3 X1 X0) \Leftrightarrow (r3\_pdiff\_1 \\
& \quad np\_2 np\_2 (k1\_pdiff\_3 np\_2 np\_2 X1) X0))) \end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(\neg v1\_xboole\_0 X0) \Rightarrow (\forall X1.((v3\_card\_1 X1 np\_2) \wedge \\
& \quad (m2\_finseq\_1 X1 X0)) \Rightarrow (\exists X2.(m1\_subset\_1 X2 X0) \wedge (\exists X3. \\
& \quad (m1\_subset\_1 X3 X0) \wedge (X1 = k10\_finseq\_1 X2 X3))) \end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\neg v1\_xboole\_0 \ np\_2 \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1\_finseq\_2 \ X1 \ X0) \Rightarrow (\forall X2. (m2\_finseq\_2 \\ X2 \ X0 \ X1) \Leftrightarrow (m1\_subset\_1 \ X2 \ X1)) \end{aligned} \quad (8)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (9)$$

Assume the following.

$$v6\_membered \ k4\_ordinal1 \quad (10)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (m1\_finseq\_2 \ X1 \ X0) \Rightarrow (\forall X2. (m2\_finseq\_2 \\ X2 \ X0 \ X1) \Rightarrow (m2\_finseq\_1 \ X2 \ X0)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((m1\_subset\_1 \ X0 \ k5\_numbers) \wedge \\ (((\neg v1\_xboole\_0 \ X1) \wedge (m1\_subset\_1 \ X1 \ k5\_numbers)) \wedge ((v1\_funct\_1 \\ X2) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k1\_euclid \ X1) \\ k1\_numbers)))))) \Rightarrow ((v1\_funct\_1 \ (k1\_pdiff\_3 \ X0 \ X1 \ X2)) \wedge ((v1\_funct\_2 \\ (k1\_pdiff\_3 \ X0 \ X1 \ X2) \ (k1\_euclid \ X1) \ k1\_numbers) \wedge (m1\_subset\_1 \\ (k1\_pdiff\_3 \ X0 \ X1 \ X2) \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ (k1\_euclid \ X1) \\ k1\_numbers)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 \ X0) \Rightarrow (m1\_finseq\_2 \ (k1\_euclid \ X0) \ k1\_numbers) \quad (14)$$

Assume the following.

$$\forall X0. (v7\_ordinal1 \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ (k1\_euclid \ X0)) \Rightarrow (v3\_card\_1 \ X1 \ X0)) \quad (15)$$

Assume the following.

$$\forall X0. (v6\_membered \ X0) \Rightarrow (\forall X1. (m1\_subset\_1 \ X1 \ X0) \Rightarrow (v7\_ordinal1 \ X1)) \quad (16)$$

**Theorem 1**

$$\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 (\forall X2.(m1\_rcomp\_1 X2 (k1\_seq\_1 \\
& \quad (k1\_pdiff\_1\ np\_2\ np\_2) X1)) \Rightarrow (((r4\_pdiff\_3 X0 X1) \wedge (r1\_tarski \\
& \quad X2 (k1\_relset\_1 k1\_numbers (k1\_pdiff\_2\ np\_2\ np\_2 (k1\_pdiff\_3 \\
& \quad np\_2\ np\_2 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 \\
& \quad (\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 \\
& \quad (k1\_seq\_1 (k1\_pdiff\_1\ np\_2\ 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 \\
& \quad (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 \\
& \quad (k3\_valued\_1 k5\_numbers k1\_numbers k1\_numbers X3 X4) (k1\_pdiff\_2 \\
& \quad np\_2\ np\_2 (k1\_pdiff\_3\ np\_2\ np\_2 X0) X1)) (k8\_funct\_2 k5\_numbers \\
& \quad k1\_numbers k1\_numbers X4 (k1\_pdiff\_2\ np\_2\ np\_2 (k1\_pdiff\_3\ np\_2 \\
& \quad np\_2 X0) X1)))))) \wedge (k5\_pdiff\_3 X0 X1 = k2\_seq\_2 (k20\_valued\_1 k5\_numbers \\
& \quad k1\_numbers k1\_numbers (k37\_valued\_1 k5\_numbers k1\_numbers X3) \\
& \quad (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 \\
& \quad X3 X4) (k1\_pdiff\_2\ np\_2\ np\_2 (k1\_pdiff\_3\ np\_2\ np\_2 X0) X1)) ( \\
& \quad k8\_funct\_2 k5\_numbers k1\_numbers k1\_numbers X4 (k1\_pdiff\_2\ np\_2 \\
& \quad np\_2 (k1\_pdiff\_3\ np\_2\ np\_2 X0) X1)))))))))
\end{aligned}$$