

# t3\_ndiff\_4 (TMStUsWtoWxPY- HaG6E6oJof5HMiMf8Kzu1q)

October 27, 2020

Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. 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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_real\_ns1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_ndiff\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_ndiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (1)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (2)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (3)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (4)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 \\ & X0 k5\_numbers)) \wedge (((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 k1\_numbers (k1\_euclid X0)))))) \wedge (v1\_xreal\_0 X2)) \Rightarrow \\ & (m2\_finseq\_2 (k1\_ndiff\_4 X0 X1 X2) k1\_numbers (k1\_euclid X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge (m2\_subset\_1 X0 k1\_numbers k5\_numbers)) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers (k1\_euclid X0)))))) \Rightarrow (\forall X2.(v1\_xreal\_0 X2) \Rightarrow ( \\
& \forall X3.(m2\_finseq\_2 X3 k1\_numbers (k1\_euclid X0)) \Rightarrow ((X3 = k1\_ndiff\_4 \\
& \quad X0 X1 X2) \Leftrightarrow (\exists X4.((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& \quad (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 (k4\_real\_ns1 X0)))))) \wedge \\
& \quad ((X1 = X4) \wedge (X3 = k1\_ndiff\_3 (k4\_real\_ns1 X0) X4 X2))))))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge (m2\_subset\_1 X0 k1\_numbers k5\_numbers)) \Rightarrow \\
& (\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers (k1\_euclid X0)))))) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge \\
& (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\
& \quad (k4\_real\_ns1 X0)))))) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow ((X2 = X1) \Rightarrow \\
& \quad (k1\_ndiff\_4 X0 X1 X3 = k1\_ndiff\_3 (k4\_real\_ns1 X0) X2 X3))))))
\end{aligned}$$