

# t46\_ndiff\_4 (TMVNibVVmWPqkqfM- SESdM8BkkuG1Zh5xuRk)

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  $v1\_ndiff\_3 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_real\_ns1 : \iota \Rightarrow \iota$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k17\_complex1 : \iota \Rightarrow \iota$  be given. Let  $k1\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v7\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v2\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_normsp\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\
& X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\
& (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1. ((v1\_funct\_1 X1) \wedge \\
& ((v1\_ndiff\_3 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& k1\_numbers (u1\_struct\_0 X0)))))) \Rightarrow ((k7\_partfun1 (u1\_struct\_0 \\
& X0) X1 k6\_numbers = k4\_struct\_0 X0) \Rightarrow (\forall X2. (m1\_subset\_1 X2 \\
& k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 X2 k6\_numbers) \wedge (\forall X3. (m1\_subset\_1 \\
& X3 k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 X3 k6\_numbers) \wedge (\forall X4. ( \\
& m1\_subset\_1 X4 k1\_numbers) \Rightarrow ((\neg r1\_xxreal\_0 X3 (k17\_complex1 X4) \Rightarrow \\
& (r1\_xxreal\_0 (k1\_normsp\_0 X0 (k7\_partfun1 (u1\_struct\_0 X0) X1 \\
& X4) (k11\_binop\_2 X2 (k17\_complex1 X4)))))))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge((\neg v1\_xboole\_0 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))))\Rightarrow(\forall X2.(m2\_subset\_1 X2 X0 X1)\Leftrightarrow(m1\_subset\_1 X2 X1)) \quad (2)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (3)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1)\wedge(v3\_ordinal1 k4\_ordinal1) \quad (4)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((\neg v2\_struct\_0 (k4\_real\_ns1 X0))\wedge((v13\_algstr\_0 (k4\_real\_ns1 X0))\wedge((v2\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v3\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v4\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v5\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v6\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v7\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v8\_rlvect\_1 (k4\_real\_ns1 X0))\wedge((v3\_normsp\_0 (k4\_real\_ns1 X0))\wedge((v4\_normsp\_0 (k4\_real\_ns1 X0))\wedge((v1\_normsp\_1 (k4\_real\_ns1 X0))\wedge(v2\_normsp\_1 (k4\_real\_ns1 X0)))))))))))))) \quad (5)$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0)\wedge(v7\_ordinal1 X0))\Rightarrow((\neg v2\_struct\_0 (k4\_real\_ns1 X0))\wedge((\neg v7\_struct\_0 (k4\_real\_ns1 X0))\wedge(v1\_normsp\_1 (k4\_real\_ns1 X0)))) \quad (6)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (7)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (8)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow((\neg v2\_struct\_0 (k4\_real\_ns1 X0))\wedge((v1\_normsp\_1 (k4\_real\_ns1 X0))\wedge(l1\_normsp\_1 (k4\_real\_ns1 X0)))) \quad (9)$$

Assume the following.

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

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v1\_xboole\_0 X0) \wedge (m2\_subset\_1 X0 k1\_numbers k5\_numbers)) \Rightarrow \\ (\forall X1.((v1\_funct\_1 X1) \wedge ((v1\_ndiff\_3 X1 (k4\_real\_ns1 X0)) \wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\ (k4\_real\_ns1 X0))))))) \Rightarrow ((k7\_partfun1 (u1\_struct\_0 (k4\_real\_ns1 \\ X0)) X1 k6\_numbers = k4\_struct\_0 (k4\_real\_ns1 X0)) \Rightarrow (\forall X2. \\ (m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 X2 k6\_numbers) \wedge \\ (\forall X3.(m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\neg(\neg r1\_xxreal\_0 X3 k6\_numbers) \wedge \\ (\forall X4.(m1\_subset\_1 X4 k1\_numbers) \Rightarrow ((\neg r1\_xxreal\_0 X3 (k17\_complex1 \\ X4)) \Rightarrow (r1\_xxreal\_0 (k1\_normsp\_0 (k4\_real\_ns1 X0) (k7\_partfun1 \\ (u1\_struct\_0 (k4\_real\_ns1 X0)) X1 X4)) (k11\_binop\_2 X2 (k17\_complex1 \\ X4)))))))))))))) \end{aligned}$$