

# t10\_ndiff\_4 (TM- NEQTVyoaNb3TqvwPy5kiqBU4JmNfbs4v1)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $r1\_ndiff\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_nfcont\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_ndiff\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_euclid : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_euclid : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k7\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $m1\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m2\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k24\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k30\_valued\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_membered : \iota \Rightarrow o$  be given. Let  $v1\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & X1 k1\_numbers) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge (m2\_subset\_1 \\
 & X2 k1\_numbers k5\_numbers)) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 \\
 & X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (k1\_euclid X2)))))) \Rightarrow ( \\
 & (r1\_ndiff\_4 X2 X3 X0) \Rightarrow ((r1\_ndiff\_4 X2 (k9\_integr15 X2 X1 k1\_numbers \\
 & X3) X0) \wedge (k1\_ndiff\_4 X2 (k9\_integr15 X2 X1 k1\_numbers X3) X0 = k9\_euclid \\
 & X2 (k1\_ndiff\_4 X2 X3 X0) X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ (\neg v1\_xboole\_0 X1) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\ X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 (k1\_euclid X0)))))) \Rightarrow (r2\_relset\_1 \\ X1 (k1\_euclid X0) (k9\_integr15 X0 (k7\_binop\_2 np\_1) X1 X2) (k2\_nfcont\_4 \\ X0 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

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

Assume the following.

$$k4\_xcmplx\_0 (k4\_xcmplx\_0 np\_1) = np\_1 \quad (5)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 X2 \\ (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ (k2\_zfmisc\_1 X0 X1)))) \Rightarrow ((r2\_relset\_1 X0 X1 X2 X3) \Leftrightarrow (X2 = X3)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2. (m2\_subset\_1 \\ X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0. \forall X1. (m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2. (m2\_finseq\_2 X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \quad (9)$$

Assume the following.

$$\forall X0. \forall X1. (m2\_finseq\_1 X1 X0) \Leftrightarrow (m1\_finseq\_1 X1 X0) \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. ((v7\_ordinal1 X0) \wedge ((m1\_subset\_1 \\ X1 (k1\_euclid X0)) \wedge (v1\_xreal\_0 X2))) \Rightarrow (k9\_euclid X0 X1 X2 = k24\_valued\_1 \\ X1 X2) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (k7\_binop\_2 X0 = k4\_xcmplx\_0 X0) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1 X0) \wedge (m1\_subset\_1 X1 (k1\_euclid X0))) \Rightarrow (k6\_euclid X0 X1 = k30\_valued\_1 X1) \quad (13)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (14)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow (k7\_binop\_2 (k7\_binop\_2 X0) = X0) \quad (15)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k4\_xcmplx\_0 (k4\_xcmplx\_0 X0) = X0) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_membered X1) \Rightarrow (v1\_valued\_0 (k2\_zfmisc\_1 X0 X1)) \quad (17)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (18)$$

Assume the following.

$$v6\_membered k4\_ordinal1 \quad (19)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \wedge (v1\_xreal\_0 (k4\_xcmplx\_0 X0))) \quad (20)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (21)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (22)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_2 X1 X0) \Rightarrow (\forall X2.(m2\_finseq\_2 X2 X0 X1) \Rightarrow (m2\_finseq\_1 X2 X0)) \quad (23)$$

Assume the following.

$$\forall X0.\forall X1.(m2\_finseq\_1 X1 X0)\Rightarrow((v1\_funct\_1 X1)\wedge((v1\_finseq\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k5\_numbers X0)))))) \quad (24)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_finseq\_1 X1 X0)\Rightarrow((v1\_relat\_1 X1)\wedge((v1\_funct\_1 X1)\wedge(v1\_finseq\_1 X1))) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.((v7\_ordinal1 X0)\wedge((v1\_xreal\_0 X1)\wedge((v1\_funct\_1 X3)\wedge(m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 (k1\_euclid X0)))))))\Rightarrow((v1\_funct\_1 (k9\_integr15 X0 X1 X2 X3))\wedge(m1\_subset\_1 (k9\_integr15 X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X2 (k1\_euclid X0)))))) \quad (26)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 X0)\Rightarrow(m1\_subset\_1 (k7\_binop\_2 X0) k1\_numbers) \quad (27)$$

Assume the following.

$$m1\_subset\_1 k5\_numbers (k1\_zfmisc\_1 k1\_numbers) \quad (28)$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0)\Rightarrow(v1\_xcmplx\_0 (k4\_xcmplx\_0 X0)) \quad (29)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((m1\_subset\_1 X0 k5\_numbers)\wedge((\neg v1\_xboole\_0 X1)\wedge((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 (k1\_euclid X0)))))))\Rightarrow((v1\_funct\_1 (k2\_nfcont\_4 X0 X1 X2))\wedge(m1\_subset\_1 (k2\_nfcont\_4 X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X1 (k1\_euclid X0)))))) \quad (30)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X0 k5\_numbers))\wedge(((v1\_funct\_1 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (k1\_euclid X0))))))\wedge(v1\_xreal\_0 X2)))\Rightarrow(m2\_finseq\_2 (k1\_ndiff\_4 X0 X1 X2) k1\_numbers (k1\_euclid X0)) \quad (31)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 X0)\Rightarrow(m1\_finseq\_2 (k1\_euclid X0) k1\_numbers) \quad (32)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_valued\_0 X0))) \Rightarrow (k30\_valued\_1 X0 = k24\_valued\_1 X0 (k4\_xcmplx\_0 np\_1)) \quad (33)$$

Assume the following.

$$\forall X0.(v3\_membered X0) \Rightarrow (v1\_membered X0) \quad (34)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (35)$$

Assume the following.

$$\forall X0.(v6\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v7\_ordinal1 X1)) \quad (36)$$

Assume the following.

$$\forall X0.(v3\_membered X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 X0) \Rightarrow (v1\_xreal\_0 X1)) \quad (37)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_valued\_0 X0)) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_valued\_0 X1)) \quad (38)$$

**Theorem 1**

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge (m2\_subset\_1 X1 k1\_numbers k5\_numbers)) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (k1\_euclid X1)))))) \Rightarrow ((r1\_ndiff\_4 X1 X2 X0) \Rightarrow ((r1\_ndiff\_4 X1 (k2\_nfcont\_4 X1 k1\_numbers X2) X0) \wedge (k1\_ndiff\_4 X1 (k2\_nfcont\_4 X1 k1\_numbers X2) X0 = k6\_euclid X1 (k1\_ndiff\_4 X1 X2 X0))))))$$