

# t11\_diff\_3 (TMF- pcVrX91ewKSqhFYgNmvqLBUte9c53Rgn)

October 27, 2020

Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_seqfunc : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_diff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k4\_diff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  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  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k1\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v6\_membered : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k4\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$m1\_subset\_1 \ k1\_xboole\_0 \ k4\_ordinal1 \tag{1}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 \ X0) \Rightarrow (k2\_xcmplx\_0 \ X0 \ k6\_numbers = X0) \tag{2}$$

Assume the following.

$$\begin{aligned} & ((v2\_xreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1\_subset\_1 \ X2 \\ & (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X1))) \wedge (m1\_subset\_1 \ X3 \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ X0 \ X1)))) \Rightarrow ((r2\_relset\_1 \ X0 \ X1 \ X2 \ X3) \Leftrightarrow (X2 = X3)) \end{aligned} \tag{4}$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \tag{5}$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \tag{6}$$

Assume the following.

$$\forall X0.\forall X1.((v7\_ordinal1\ X0)\wedge(m1\_subset\_1\ X1\ k5\_numbers))\Rightarrow (k1\_nat\_1\ X0\ X1 = k2\_xcmplx\_0\ X0\ X1) \quad (7)$$

Assume the following.

$$v6\_membered\ k4\_ordinal1 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1\_funct\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))\wedge(v1\_xreal\_0\ X1))\Rightarrow(( \\ v1\_funct\_1\ (k7\_diff\_1\ X0\ X1))\wedge((v1\_funct\_2\ (k7\_diff\_1\ X0\ X1)\ k5\_numbers \\ & (k4\_partfun1\ k1\_numbers\ k1\_numbers))\wedge(m1\_subset\_1\ (k7\_diff\_1 \\ X0\ X1)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ k1\_numbers \\ & k1\_numbers)))))) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.(((v1\_funct\_1\ X2)\wedge \\ & ((v1\_funct\_2\ X2\ k5\_numbers\ (k4\_partfun1\ X0\ X1))\wedge(m1\_subset\_1 \\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers\ (k4\_partfun1\ X0\ X1))))))\wedge \\ & (v7\_ordinal1\ X3))\Rightarrow((v1\_funct\_1\ (k1\_seqfunc\ X0\ X1\ X2\ X3))\wedge(m1\_subset\_1 \\ & (k1\_seqfunc\ X0\ X1\ X2\ X3)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1)))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((v1\_funct\_1\ X0)\wedge(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1 \\ & k1\_numbers\ k1\_numbers))))\Rightarrow(\forall X1.(v1\_xreal\_0\ X1)\Rightarrow(\forall X2. \\ & ((v1\_funct\_1\ X2)\wedge((v1\_funct\_2\ X2\ k5\_numbers\ (k4\_partfun1\ k1\_numbers \\ & k1\_numbers))\wedge(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k5\_numbers \\ & (k4\_partfun1\ k1\_numbers\ k1\_numbers))))))\Rightarrow((X2 = k7\_diff\_1\ X0 \\ & X1)\Leftrightarrow((r2\_relset\_1\ k1\_numbers\ k1\_numbers\ (k1\_seqfunc\ k1\_numbers \\ & k1\_numbers\ X2\ k6\_numbers)\ X0)\wedge(\forall X3.(v7\_ordinal1\ X3)\Rightarrow( \\ & r2\_relset\_1\ k1\_numbers\ k1\_numbers\ (k1\_seqfunc\ k1\_numbers\ k1\_numbers \\ & X2\ (k1\_nat\_1\ X3\ np\_1))\ (k4\_diff\_1\ (k1\_seqfunc\ k1\_numbers\ k1\_numbers \\ & X2\ X3)\ X1)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xcmplx\_0\ X0)\wedge(v1\_xcmplx\_0\ X1))\Rightarrow( k2\_xcmplx\_0\ X0\ X1 = k2\_xcmplx\_0\ X1\ X0) \quad (12)$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0)\Rightarrow(v1\_xcmplx\_0\ X0) \quad (13)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(v1\_xreal\_0\ X0) \quad (14)$$

Assume the following.

$$\forall X0.(v6\_membered\ X0)\Rightarrow(\forall X1.(m1\_subset\_1\ X1\ X0)\Rightarrow (v7\_ordinal1\ X1)) \quad (15)$$

**Theorem 1**

$$\begin{aligned} \forall X0.(m1\_subset\_1\ X0\ k1\_numbers)\Rightarrow(\forall X1.((v1\_funct\_1 \\ X1)\wedge((v1\_funct\_2\ X1\ k1\_numbers\ k1\_numbers)\wedge(m1\_subset\_1\ X1\ ( \\ k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers))))))\Rightarrow(r2\_relset\_1 \\ k1\_numbers\ k1\_numbers\ (k1\_seqfunc\ k1\_numbers\ k1\_numbers\ (k7\_diff\_1 \\ X1\ X0)\ np\_1)\ (k4\_diff\_1\ X1\ X0)) \end{aligned}$$