

# t18\_ndiff\_3 (TMbeaqRvYH- fkYnzyFEASFVDyrxxGCo7GuBa)

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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  $v3\_rcomp\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarSKI : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_vfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_ndiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_ndiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_ndiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_ndiff\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_normsp\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v2\_struct\_0 X0) \wedge (\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\ & (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1. (m1\_subset\_1 X1 k1\_numbers) \Rightarrow \\ & (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X0)))))) \Rightarrow (\forall X3. ((v1\_funct\_1 X3) \wedge \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X0)))))) \Rightarrow (((r1\_ndiff\_3 X0 X2 X1) \wedge (r1\_ndiff\_3 X0 X3 X1)) \Rightarrow ((r1\_ndiff\_3 X0 \\ & (k2\_vfunct\_1 k1\_numbers X0 X2 X3) X1) \wedge (k1\_ndiff\_3 X0 (k2\_vfunct\_1 k1\_numbers X0 X2 X3) X1 = k5\_algstr\_0 X0 (k1\_ndiff\_3 X0 X2 X1) (k1\_ndiff\_3 X0 X3 X1)))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\ & X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\ & (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1.((v3\_rcomp\_1 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow (\forall X2.((v1\_funct\_1 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\ & X0)))) \Rightarrow ((r2\_ndiff\_3 X0 X2 X1) \Leftrightarrow ((r1\_tarski X1 (k1\_relset\_1 k1\_numbers \\ & X2)) \wedge (\forall X3.(m1\_subset\_1 X3 k1\_numbers) \Rightarrow ((X3 \in X1) \Rightarrow (r1\_ndiff\_3 \\ & X0 X2 X3))))))))) \end{aligned} \quad (3)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l1\_rlvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (5)$$

Assume the following.

$$\forall X0.(l1\_normsp\_1 X0) \Rightarrow ((l1\_rlvect\_1 X0) \wedge (l2\_normsp\_0 X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0) \wedge \\ & (((\neg v2\_struct\_0 X1) \wedge (l2\_algstr\_0 X1)) \wedge (((v1\_funct\_1 X2) \wedge (m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1)))))) \wedge ((v1\_funct\_1 \\ & X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 \\ & X1)))))) \Rightarrow ((v1\_funct\_1 (k2\_vfunct\_1 X0 X1 X2 X3)) \wedge (m1\_subset\_1 \\ & (k2\_vfunct\_1 X0 X1 X2 X3) (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 \\ & X1)))))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct\_0 X0) \wedge ((\neg v7\_struct\_0 \\ & X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge \\ & ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 \\ & X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge \\ & ((v2\_normsp\_1 X0) \wedge (l1\_normsp\_1 X0)))))))))) \wedge ((v1\_funct\_1 \\ & X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\ & X0)))))) \Rightarrow ((v1\_funct\_1 (k2\_ndiff\_3 X0 X1 X2)) \wedge (m1\_subset\_1 (k2\_ndiff\_3 \\ & X0 X1 X2) (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X0)))))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\
& X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\
& (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\
& X0)))))) \Rightarrow (\forall X2.(r2\_ndiff\_3 X0 X1 X2) \Rightarrow (\forall X3.((v1\_funct\_1 \\
& X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\
& X0)))))) \Rightarrow ((X3 = k2\_ndiff\_3 X0 X1 X2) \Leftrightarrow ((k1\_relset\_1 k1\_numbers X3 = \\
& X2) \wedge (\forall X4.(m1\_subset\_1 X4 k1\_numbers) \Rightarrow ((X4 \in X2) \Rightarrow (k1\_funct\_1 \\
& X3 X4 = k1\_ndiff\_3 X0 X1 X4)))))))))
\end{aligned} \tag{9}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (\neg v7\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\
& X0) \wedge ((v3\_normsp\_0 X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge \\
& (l1\_normsp\_1 X0)))))))))) \Rightarrow (\forall X1.((v3\_rcomp\_1 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow (\forall X2.((v1\_funct\_1 \\
& X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 \\
& X0)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 k1\_numbers (u1\_struct\_0 X0)))))) \Rightarrow (((r1\_tarski X1 \\
& (k1\_relset\_1 k1\_numbers (k2\_vfunct\_1 k1\_numbers X0 X2 X3))) \wedge ( \\
& (r2\_ndiff\_3 X0 X2 X1) \wedge (r2\_ndiff\_3 X0 X3 X1))) \Rightarrow ((r2\_ndiff\_3 X0 ( \\
& k2\_vfunct\_1 k1\_numbers X0 X2 X3) X1) \wedge (\forall X4.(m1\_subset\_1 \\
& X4 k1\_numbers) \Rightarrow ((X4 \in X1) \Rightarrow (k1\_funct\_1 (k2\_ndiff\_3 X0 (k2\_vfunct\_1 \\
& k1\_numbers X0 X2 X3) X1) X4 = k5\_algstr\_0 X0 (k1\_ndiff\_3 X0 X2 X4) ( \\
& k1\_ndiff\_3 X0 X3 X4)))))))))
\end{aligned}$$