

t38\_ndiff\_5 (TM-  
cfQ5pEGL9JvVD6jhbSh6LAPq8DFTNzZBo)

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Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $v2\_prvect\_2 : \iota \Rightarrow o$  be given. Let  $v1\_ndiff\_5 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k11\_prvect\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k14\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $k4\_ndiff\_5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_card\_3 : \iota \Rightarrow \iota$  be given. Let  $k4\_prvect\_2 : \iota \Rightarrow \iota$  be given. Let  $k1\_ndiff\_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v1\_normsp\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 \\
 & X0) \wedge ((v1\_finseq\_1 X0) \wedge ((v2\_prvect\_2 X0) \wedge (v1\_ndiff\_5 X0)))))) \Rightarrow \\
 & (\forall X1.(m2\_subset\_1 X1 k5\_numbers (k4\_finseq\_1 X0)) \Rightarrow (\forall X2. \\
 & (m2\_subset\_1 X2 k5\_numbers (k4\_finseq\_1 X0)) \Rightarrow (\forall X3.(m1\_subset\_1 \\
 & X3 (u1\_struct\_0 (k11\_prvect\_2 X0 X1))) \Rightarrow (\forall X4.(m1\_subset\_1 \\
 & X4 (k4\_card\_3 (k4\_prvect\_2 X0)) \Rightarrow ((X4 = k3\_funct\_2 (u1\_struct\_0 \\
 & (k11\_prvect\_2 X0 X1)) (u1\_struct\_0 (k14\_prvect\_2 X0)) (k4\_ndiff\_5 \\
 & X0 X1 (k4\_struct\_0 (k14\_prvect\_2 X0)) X3) \Rightarrow (((X1 = X2) \Rightarrow (k1\_ndiff\_5 \\
 & X0 X4 X2 = X3)) \wedge ((X1 \neq X2) \Rightarrow (k1\_ndiff\_5 X0 X4 X2 = k4\_struct\_0 (k11\_prvect\_2 \\
 & X0 X2))))))))))
 \end{aligned}
 \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 \\
 & X0) \wedge ((v1\_finseq\_1 X0) \wedge (v2\_prvect\_2 X0)))))) \Rightarrow (\forall X1.(m1\_subset\_1 \\
 & X1 (k4\_card\_3 (k4\_prvect\_2 X0)) \Rightarrow ((k4\_struct\_0 (k14\_prvect\_2 \\
 & X0) = X1) \Leftrightarrow (\forall X2.(m2\_subset\_1 X2 k5\_numbers (k4\_finseq\_1 \\
 & X0)) \Rightarrow (k1\_ndiff\_5 X0 X1 X2 = k4\_struct\_0 (k11\_prvect\_2 X0 X2))))))
 \end{aligned}
 \tag{2}$$

Assume the following.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v2\_prvect\_2 X0)))))) \Rightarrow (u1\_struct\_0 (k14\_prvect\_2 X0) = k4\_card\_3 (k4\_prvect\_2 X0)) \quad (3)$$

Assume the following.

$$\forall X0.(l2\_normsp\_0 X0) \Rightarrow ((l1\_normsp\_0 X0) \wedge (l2\_struct\_0 X0)) \quad (4)$$

Assume the following.

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

Assume the following.

$$\forall X0.(l2\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k4\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (6)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((\neg v1\_xboole\_0 X0) \wedge ((v1\_finseq\_1 X0) \wedge (v2\_prvect\_2 X0)))))) \Rightarrow ((\neg v2\_struct\_0 (k14\_prvect\_2 X0)) \wedge ((v1\_normsp\_1 (k14\_prvect\_2 X0)) \wedge (l1\_normsp\_1 (k14\_prvect\_2 X0)))) \quad (7)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge ((v1\_finseq\_1 X0) \wedge ((v2\_prvect\_2 X0) \wedge (v1\_ndiff\_5 X0)))))) \Rightarrow \\ & (\forall X1.(m2\_subset\_1 X1 k5\_numbers (k4\_finseq\_1 X0)) \Rightarrow (\forall X2. \\ & (m1\_subset\_1 X2 (u1\_struct\_0 (k11\_prvect\_2 X0 X1)) \Rightarrow (\neg (X2 \neq k4\_struct\_0 \\ & (k11\_prvect\_2 X0 X1)) \wedge (k3\_funct\_2 (u1\_struct\_0 (k11\_prvect\_2 \\ & X0 X1)) (u1\_struct\_0 (k14\_prvect\_2 X0) (k4\_ndiff\_5 X0 X1 (k4\_struct\_0 \\ & (k14\_prvect\_2 X0))) X2 = k4\_struct\_0 (k14\_prvect\_2 X0)))))) \end{aligned}$$