

t1\_vectsp\_4  
(TMRJHsuzzB3e1JztdFd7qfNYh3qDhdQQd1k)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  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  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v8\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v9\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v10\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v11\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_vectsp\_4 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k4\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l5\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l4\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((X0 \in X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 X2))) \Rightarrow (m1\_subset\_1 X0 X2) \quad (2)$$

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.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge \\
& (v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow \\
& (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(( \\
& \neg v2\_struct\_0 X2) \wedge ((v13\_algstr\_0 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 \\
& X2) \wedge ((v8\_vectsp\_1 X2 X0) \wedge ((v9\_vectsp\_1 X2 X0) \wedge ((v10\_vectsp\_1 \\
& X2 X0) \wedge ((v11\_vectsp\_1 X2 X0) \wedge (l1\_vectsp\_1 X2 X0)))))) \Rightarrow (\forall X3. \\
& (m1\_subset\_1 X3 (u1\_struct\_0 X2)) \Rightarrow ((k4\_vectsp\_1 X0 X2) \wedge (k4\_struct\_0 \\
& X0) X3 = k4\_struct\_0 X2) \wedge ((k4\_vectsp\_1 X0 X2 (k4\_algstr\_0 X0 (k5\_struct\_0 \\
& X0)) X3 = k4\_algstr\_0 X2 X3) \wedge (k4\_vectsp\_1 X0 X2 X1 (k4\_struct\_0 X2) = \\
& k4\_struct\_0 X2))))))
\end{aligned} \tag{4}$$

Assume the following.

$$\forall X0. \exists X1. (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \wedge (v1\_xboole\_0 X1) \tag{5}$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \tag{6}$$

Assume the following.

$$\forall X0. (l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \tag{7}$$

Assume the following.

$$\forall X0. (l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \tag{8}$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \tag{9}$$

Assume the following.

$$\forall X0. (l2\_struct\_0 X0) \Rightarrow (m1\_subset\_1 (k4\_struct\_0 X0) (u1\_struct\_0 X0)) \tag{10}$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \tag{11}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \Rightarrow (\forall X1. \\
& ((\neg v2\_struct\_0 X1) \wedge (l1\_vectsp\_1 X1 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (k1\_zfmisc\_1 (u1\_struct\_0 X1))) \Rightarrow ((v1\_vectsp\_4 X2 X0 X1) \Leftrightarrow (( \\
& \forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X1)) \Rightarrow (((X3 \in X2) \wedge (X4 \in X2)) \Rightarrow (k1\_algstr\_0 X1 X3 X4 \in \\
& X2)))) \wedge (\forall X3.(m1\_subset\_1 X3 (u1\_struct\_0 X0)) \Rightarrow (\forall X4. \\
& (m1\_subset\_1 X4 (u1\_struct\_0 X1)) \Rightarrow ((X4 \in X2) \Rightarrow (k4\_vectsp\_1 X0 X1 \\
& X3 X4 \in X2))))))))) \\
\end{aligned} \tag{12}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)) \Rightarrow (v1\_xboole\_0 X1)) \tag{13}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\
& X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
& ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))) \Rightarrow \\
& (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v13\_algstr\_0 X1) \wedge ((v8\_vectsp\_1 \\
& X1 X0) \wedge ((v9\_vectsp\_1 X1 X0) \wedge ((v10\_vectsp\_1 X1 X0) \wedge ((v11\_vectsp\_1 \\
& X1 X0) \wedge ((v2\_rlvect\_1 X1) \wedge ((v3\_rlvect\_1 X1) \wedge ((v4\_rlvect\_1 X1) \wedge \\
& (l1\_vectsp\_1 X1 X0)))))))))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X1))) \Rightarrow ((v1\_vectsp\_4 X2 X0 X1) \Rightarrow ((X2 = k1\_xboole\_0) \vee \\
& (k4\_struct\_0 X1 \in X2))))))
\end{aligned}$$