

# l30\_vectsp\_2 (TMXe- VAGYA2swW9hHTgjiBMmMd8hkZto3rHQ)

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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  $g1\_vectsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u1\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $v6\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $v3\_vectsp\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ( \\
& (v5\_vectsp\_1 X0) \wedge ((v6\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0))))))) \Rightarrow \\
& (\forall X1. ((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 X1 (k2\_zfmisc\_1 (u1\_struct\_0 \\
& X0) (u1\_struct\_0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) \\
& (u1\_struct\_0 X0)))))) \Rightarrow ((v2\_rlvect\_1 (g1\_vectsp\_1 X0 (u1\_struct\_0 \\
& X0) (u1\_algstr\_0 X0) (k4\_struct\_0 X0) X1)) \wedge ((v3\_rlvect\_1 (g1\_vectsp\_1 \\
& X0 (u1\_struct\_0 X0) (u1\_algstr\_0 X0) (k4\_struct\_0 X0) X1)) \wedge ((v4\_rlvect\_1 \\
& (g1\_vectsp\_1 X0 (u1\_struct\_0 X0) (u1\_algstr\_0 X0) (k4\_struct\_0 \\
& X0) X1)) \wedge (v13\_algstr\_0 (g1\_vectsp\_1 X0 (u1\_struct\_0 X0) (u1\_algstr\_0 \\
& X0) (k4\_struct\_0 X0) X1))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 \\
& X0))) \Rightarrow ((v1\_funct\_1 (u2\_algstr\_0 X0) \wedge ((v1\_funct\_2 (u2\_algstr\_0 \\
& X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X0)) (u1\_struct\_0 \\
& X0)) \wedge (v2\_binop\_1 (u2\_algstr\_0 X0) (u1\_struct\_0 X0))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} \forall X0. (&l3\_algstr\_0 X0) \Rightarrow ((v1\_funct\_1 (u2\_algstr\_0 X0)) \wedge \\ &((v1\_funct\_2 (u2\_algstr\_0 X0) (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ &u1\_struct\_0 X0)) (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 (u2\_algstr\_0 \\ &X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) ( \\ &u1\_struct\_0 X0)) (u1\_struct\_0 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \quad (4)$$

Assume the following.

$$\forall X0. (l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \quad (5)$$

Assume the following.

$$\forall X0. (l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \quad (6)$$

Assume the following.

$$\begin{aligned} \forall X0. (&l4\_algstr\_0 X0) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge (v4\_vectsp\_1 \\ &X0)) \Rightarrow ((\neg v2\_struct\_0 X0) \wedge ((v3\_vectsp\_1 X0) \wedge (v6\_vectsp\_1 X0)))) \end{aligned} \quad (7)$$

**Theorem 1**

$$\begin{aligned} \forall X0. (&(\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_group\_1 \\ &X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\ &((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow \\ &((v2\_rlvect\_1 (g1\_vectsp\_1 X0) (u1\_struct\_0 X0) (u1\_algstr\_0 X0) \\ &(k4\_struct\_0 X0) (u2\_algstr\_0 X0)) \wedge ((v3\_rlvect\_1 (g1\_vectsp\_1 \\ &X0) (u1\_struct\_0 X0) (u1\_algstr\_0 X0) (k4\_struct\_0 X0) (u2\_algstr\_0 \\ &X0)) \wedge ((v4\_rlvect\_1 (g1\_vectsp\_1 X0) (u1\_struct\_0 X0) (u1\_algstr\_0 \\ &X0) (k4\_struct\_0 X0) (u2\_algstr\_0 X0)) \wedge (v13\_algstr\_0 (g1\_vectsp\_1 \\ &X0) (u1\_struct\_0 X0) (u1\_algstr\_0 X0) (k4\_struct\_0 X0) (u2\_algstr\_0 \\ &X0)))))) \end{aligned}$$