

## t33\_hilbasis

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v33\_algstr\_0 : \iota \Rightarrow o$  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  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $v5\_group\_1 : \iota \Rightarrow o$  be given. Let  $v4\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $v5\_vectsp\_1 : \iota \Rightarrow o$  be given. Let  $l6\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v6\_ideal\_1 : \iota \Rightarrow o$  be given. Let  $k7\_ideal\_1 : \iota \Rightarrow \iota$  be given. Let  $k6\_domain\_1 : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v2\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $v5\_ideal\_1 : \iota \Rightarrow \iota \Rightarrow o$  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  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v4\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0))) \Rightarrow (k7\_ideal\_1 X0 (k6\_domain\_1 (u1\_struct\_0 X0) (k5\_struct\_0 X0))) = u1\_struct\_0 X0 \quad (1)$$

Assume the following.

$$\forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))) \Rightarrow (k7\_ideal\_1 X0 (k6\_domain\_1 (u1\_struct\_0 X0) (k4\_struct\_0 X0))) = k6\_domain\_1 (u1\_struct\_0 X0) (k4\_struct\_0 X0) \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\
& X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\
& ((v3\_group\_1 X0) \wedge ((v5\_group\_1 X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 \\
& X0) \wedge (l6\_algstr\_0 X0)))))))))) \Rightarrow (((\neg v2\_struct\_0 X0) \wedge ((\neg v6\_struct\_0 \\
& X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v33\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 X0) \wedge \\
& ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v3\_group\_1 X0) \wedge ((v5\_group\_1 \\
& X0) \wedge ((v4\_vectsp\_1 X0) \wedge ((v5\_vectsp\_1 X0) \wedge (l6\_algstr\_0 X0)))))))))) \Leftrightarrow \\
& (\forall X1.((\neg v1\_xboole\_0 X1) \wedge ((v1\_ideal\_1 X1 X0) \wedge ((v2\_ideal\_1 \\
& X1 X0) \wedge ((v3\_ideal\_1 X1 X0) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\
& X0))))))) \Rightarrow ((X1 = k6\_domain\_1 (u1\_struct\_0 X0) (k4\_struct\_0 X0)) \vee \\
& (X1 = u1\_struct\_0 X0)))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0. \forall X1. ((\neg v1\_xboole\_0 X0) \wedge (m1\_subset\_1 X1 X0)) \Rightarrow (k6\_domain\_1 X0 X1 = k1\_tarski X1) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge (l6\_algstr\_0 X0)) \wedge \\
& ((\neg v1\_xboole\_0 X1) \wedge ((v1\_finset\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
& (u1\_struct\_0 X0)))))) \Rightarrow ((\neg v1\_xboole\_0 (k7\_ideal\_1 X0 X1)) \wedge (( \\
& v1\_ideal\_1 (k7\_ideal\_1 X0 X1) X0) \wedge ((v2\_ideal\_1 (k7\_ideal\_1 X0 \\
& X1) X0) \wedge ((v3\_ideal\_1 (k7\_ideal\_1 X0 X1) X0) \wedge (v5\_ideal\_1 (k7\_ideal\_1 \\
& X0 X1) X0))))
\end{aligned} \tag{5}$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k1\_tarski X0) \tag{6}$$

Assume the following.

$$\forall X0. v1\_finset\_1 (k1\_tarski X0) \tag{7}$$

Assume the following.

$$\forall X0. (l6\_algstr\_0 X0) \Rightarrow ((l2\_algstr\_0 X0) \wedge (l5\_algstr\_0 X0)) \tag{8}$$

Assume the following.

$$\forall X0. (l5\_algstr\_0 X0) \Rightarrow ((l4\_algstr\_0 X0) \wedge (l4\_struct\_0 X0)) \tag{9}$$

Assume the following.

$$\forall X0. (l4\_algstr\_0 X0) \Rightarrow ((l3\_struct\_0 X0) \wedge (l3\_algstr\_0 X0)) \tag{10}$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \tag{11}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0 X0)\wedge(m1\_subset\_1 X1 X0))\Rightarrow (m1\_subset\_1 (k6\_domain\_1 X0 X1) (k1\_zfmisc\_1 X0)) \quad (12)$$

Assume the following.

$$\forall X0.(l3\_struct\_0 X0)\Rightarrow(m1\_subset\_1 (k5\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (13)$$

Assume the following.

$$\forall X0.(l2\_struct\_0 X0)\Rightarrow(m1\_subset\_1 (k4\_struct\_0 X0) (u1\_struct\_0 X0)) \quad (14)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge(l6\_algstr\_0 X0))\Rightarrow((v6\_ideal\_1 \\ X0)\Leftrightarrow(\forall X1.((\neg v1\_xboole\_0 X1)\wedge((v1\_ideal\_1 X1 X0)\wedge((v2\_ideal\_1 \\ X1 X0)\wedge((v3\_ideal\_1 X1 X0)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ X0))))))))\Rightarrow(v5\_ideal\_1 X1 X0)) \end{aligned} \quad (15)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0)\Rightarrow(\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 X0))\Rightarrow(v1\_xboole\_0 X1)) \quad (16)$$

**Theorem 1**

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0)\wedge((\neg v6\_struct\_0 X0)\wedge((v13\_algstr\_0 \\ X0)\wedge((v33\_algstr\_0 X0)\wedge((v2\_rlvect\_1 X0)\wedge((v3\_rlvect\_1 X0)\wedge \\ ((v4\_rlvect\_1 X0)\wedge((v3\_group\_1 X0)\wedge((v5\_group\_1 X0)\wedge((v4\_vectsp\_1 \\ X0)\wedge((v5\_vectsp\_1 X0)\wedge(l6\_algstr\_0 X0))))))))))))\Rightarrow(v6\_ideal\_1 \\ X0) \end{aligned}$$