

t5\_bhsp\_1  
(TMVBxv7qgHT6YS53Vd7X2C9qZPPb4EbHsBG)

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Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  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  $v2\_bhsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_bhsp\_1 : \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k2\_bhsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rlvect\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k1\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_bhsp\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k4\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((v2\_rlvect\_1 X0) \wedge (l1\_algstr\_0 \\ & X0)) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 \\ & X0)))) \Rightarrow (k3\_rlvect\_1 X0 X1 X2 = k1\_algstr\_0 X0 X1 X2) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (((\neg(v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 \\ & X0) \wedge ((v2\_rlvect\_1 X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge \\ & ((v5\_rlvect\_1 X0) \wedge ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 \\ & X0) \wedge ((v2\_bhsp\_1 X0) \wedge (l1\_bhsp\_1 X0)))))))))) \wedge ((m1\_subset\_1 \\ & X1 (u1\_struct\_0 X0)) \wedge (m1\_subset\_1 X2 (u1\_struct\_0 X0)))) \Rightarrow (k2\_bhsp\_1 \\ & X0 X1 X2 = k1\_bhsp\_1 X0 X1 X2) \end{aligned} \quad (2)$$

Assume the following.

$$\forall X0. (l2\_algstr\_0 X0) \Rightarrow ((l2\_struct\_0 X0) \wedge (l1\_algstr\_0 X0)) \quad (3)$$

Assume the following.

$$\forall X0. (l1\_rlvect\_1 X0) \Rightarrow (l2\_algstr\_0 X0) \quad (4)$$

Assume the following.

$$\forall X0.(l1\_bhspl_1 X0) \Rightarrow (l1\_rlvect_1 X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((v2\_rlvect_1 X0) \wedge (l1\_algstr_0 \\ & X0)) \wedge ((m1\_subset_1 X1 (u1\_struct_0 X0)) \wedge (m1\_subset_1 X2 (u1\_struct_0 \\ & X0)))) \Rightarrow (m1\_subset_1 (k3\_rlvect_1 X0 X1 X2) (u1\_struct_0 X0)) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(((\neg v2\_struct_0 X0) \wedge (l1\_rlvect_1 \\ & X0)) \wedge ((m1\_subset_1 X1 (u1\_struct_0 X0)) \wedge (v1\_xreal_0 X2))) \Rightarrow ( \\ & m1\_subset_1 (k1\_rlvect_1 X0 X1 X2) (u1\_struct_0 X0)) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(((\neg v2\_struct_0 X0) \wedge (l1\_bhspl_1 X0)) \Rightarrow ((v2\_bhspl_1 X0) \Leftrightarrow \\ & (\forall X1.(m1\_subset_1 X1 (u1\_struct_0 X0)) \Rightarrow (\forall X2.(m1\_subset_1 \\ & X2 (u1\_struct_0 X0)) \Rightarrow (\forall X3.(m1\_subset_1 X3 (u1\_struct_0 \\ & X0)) \Rightarrow (\forall X4.(m1\_subset_1 X4 k1\_numbers) \Rightarrow (((k1\_bhspl_1 X0 \\ & X1 X1 = k6\_numbers) \Rightarrow (X1 = k4\_struct_0 X0)) \wedge (((X1 = k4\_struct_0 X0) \Rightarrow \\ & (k1\_bhspl_1 X0 X1 X1 = k6\_numbers)) \wedge ((r1\_xreal_0 k6\_numbers (k1\_bhspl_1 \\ & X0 X1 X1)) \wedge ((k1\_bhspl_1 X0 X1 X2 = k1\_bhspl_1 X0 X2 X1) \wedge ((k1\_bhspl_1 \\ & X0 (k1\_algstr_0 X0 X1 X2) X3 = k7\_real_1 (k1\_bhspl_1 X0 X1 X3) (k1\_bhspl_1 \\ & X0 X2 X3)) \wedge (k1\_bhspl_1 X0 (k1\_rlvect_1 X0 X1 X4) X2 = k8\_real_1 X4 ( \\ & k1\_bhspl_1 X0 X1 X2)))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\forall X0.(m1\_subset_1 X0 k1\_numbers) \Rightarrow (v1\_xreal_0 X0) \quad (9)$$

### Theorem 1

$$\begin{aligned} & \forall X0.(m1\_subset_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset_1 \\ & X1 k1\_numbers) \Rightarrow (\forall X2.(((\neg v2\_struct_0 X2) \wedge ((v13\_algstr_0 \\ & X2) \wedge ((v2\_rlvect_1 X2) \wedge ((v3\_rlvect_1 X2) \wedge ((v4\_rlvect_1 X2) \wedge \\ & ((v5\_rlvect_1 X2) \wedge ((v6\_rlvect_1 X2) \wedge ((v7\_rlvect_1 X2) \wedge ((v8\_rlvect_1 \\ & X2) \wedge ((v2\_bhspl_1 X2) \wedge (l1\_bhspl_1 X2)))))))))) \Rightarrow (\forall X3.( \\ & m1\_subset_1 X3 (u1\_struct_0 X2)) \Rightarrow (\forall X4.(m1\_subset_1 X4 \\ & (u1\_struct_0 X2)) \Rightarrow (\forall X5.(m1\_subset_1 X5 (u1\_struct_0 X2)) \Rightarrow \\ & (k2\_bhspl_1 X2 (k3\_rlvect_1 X2 (k1\_rlvect_1 X2 X3 X0) (k1\_rlvect_1 \\ & X2 X4 X1)) X5 = k7\_real_1 (k8\_real_1 X0 (k2\_bhspl_1 X2 X3 X5)) (k8\_real_1 \\ & X1 (k2\_bhspl_1 X2 X4 X5)))))) \end{aligned}$$