

## t24\_hahnban

(TMYK Hr4YPySvkMaSZPxyextRWF6KaFX9g8S)

October 27, 2020

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  $v3\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v2\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $m1\_rlsub\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $v2\_hahnban : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_hahnban : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_normsp\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_hahnban : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v6\_hahnban : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $l1\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_hahnban : \iota \Rightarrow \iota \Rightarrow o$  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  $v5\_hahnban : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
 & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
 & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 \\
 & X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge (l1\_normsp\_1 X0)))))))))) \Rightarrow \\
 & ((v1\_funct\_1 (u1\_normsp\_0 X0)) \wedge (v1\_funct\_2 (u1\_normsp\_0 X0) \\
 & (u1\_struct\_0 X0) k1\_numbers) \wedge ((v1\_hahnban (u1\_normsp\_0 X0) X0) \wedge \\
 & ((v6\_hahnban (u1\_normsp\_0 X0) X0) \wedge (m1\_subset\_1 (u1\_normsp\_0 \\
 & X0) (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) k1\_numbers))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_rbsub\_1 X1 X0) \Rightarrow (\forall X2.((v1\_funct\_1 \\
& X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) k1\_numbers) \wedge ((v1\_hahnban \\
& X2 X0) \wedge ((v4\_hahnban X2 X0) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) k1\_numbers)))))) \Rightarrow (\forall X3.((v1\_funct\_1 \\
& X3) \wedge ((v1\_funct\_2 X3 (u1\_struct\_0 X1) k1\_numbers) \wedge ((v2\_hahnban \\
& X3 X1) \wedge ((v3\_hahnban X3 X1) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) k1\_numbers)))))) \Rightarrow (\neg (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X1)) \Rightarrow (\forall X5.(m1\_subset\_1 X5 (u1\_struct\_0 \\
& X0)) \Rightarrow ((X4 = X5) \Rightarrow (r1\_xxreal\_0 (k3\_funct\_2 (u1\_struct\_0 X1) k1\_numbers \\
& X3 X4) (k3\_funct\_2 (u1\_struct\_0 X0) k1\_numbers X2 X5)))))) \wedge (\forall X4. \\
& ((v1\_funct\_1 X4) \wedge ((v1\_funct\_2 X4 (u1\_struct\_0 X0) k1\_numbers) \wedge \\
& ((v2\_hahnban X4 X0) \wedge ((v3\_hahnban X4 X0) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 \\
& (k2\_zfmisc\_1 (u1\_struct\_0 X0) k1\_numbers)))))) \Rightarrow (\neg (k2\_partfun1 \\
& (u1\_struct\_0 X0) k1\_numbers X4 (u1\_struct\_0 X1) = X3) \wedge (\forall X5. \\
& (m1\_subset\_1 X5 (u1\_struct\_0 X0)) \Rightarrow (r1\_xxreal\_0 (k3\_funct\_2 ( \\
& u1\_struct\_0 X0) k1\_numbers X4 X5) (k3\_funct\_2 (u1\_struct\_0 X0) \\
& k1\_numbers X2 X5))))))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.(l2\_normsp\_0 X0) \Rightarrow ((l1\_normsp\_0 X0) \wedge (l2\_struct\_0 X0)) \tag{3}$$

Assume the following.

$$\forall X0.(l1\_normsp\_1 X0) \Rightarrow ((l1\_rlvect\_1 X0) \wedge (l2\_normsp\_0 X0)) \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_normsp\_0 X0)) \Rightarrow (\forall X1. \\
& (m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (k1\_normsp\_0 X0 X1 = k3\_funct\_2 \\
& (u1\_struct\_0 X0) k1\_numbers (u1\_normsp\_0 X0) X1))
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) k1\_numbers)) \Rightarrow (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 X0) k1\_numbers) \wedge (v6\_hahnban X1 X0)) \Rightarrow ((v1\_funct\_1 \\
& X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) k1\_numbers) \wedge (v5\_hahnban \\
& X1 X0))))))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge (l1\_rlvect\_1 \\
& X0)))))))))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) k1\_numbers)) \Rightarrow (((v1\_funct\_1 X1) \wedge ((v1\_funct\_2 \\
& X1 (u1\_struct\_0 X0) k1\_numbers) \wedge (v5\_hahnban X1 X0)) \Rightarrow ((v1\_funct\_1 \\
& X1) \wedge ((v1\_funct\_2 X1 (u1\_struct\_0 X0) k1\_numbers) \wedge (v4\_hahnban \\
& X1 X0))))))
\end{aligned} \tag{7}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\
& X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\
& ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 \\
& X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge (l1\_normsp\_1 X0)))))))))) \Rightarrow \\
& (\forall X1.(m1\_rlsub\_1 X1 X0) \Rightarrow (\forall X2.((v1\_funct\_1 X2) \wedge \\
& ((v1\_funct\_2 X2 (u1\_struct\_0 X1) k1\_numbers) \wedge ((v2\_hahnban X2 \\
& X1) \wedge ((v3\_hahnban X2 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X1) k1\_numbers)))))) \Rightarrow (\neg (\forall X3.(m1\_subset\_1 \\
& X3 (u1\_struct\_0 X1)) \Rightarrow (\forall X4.(m1\_subset\_1 X4 (u1\_struct\_0 \\
& X0)) \Rightarrow ((X3 = X4) \Rightarrow (r1\_xxreal\_0 (k3\_funct\_2 (u1\_struct\_0 X1) k1\_numbers \\
& X2 X3) (k1\_normsp\_0 X0 X4)))))) \wedge (\forall X3.((v1\_funct\_1 X3) \wedge ( \\
& (v1\_funct\_2 X3 (u1\_struct\_0 X0) k1\_numbers) \wedge ((v2\_hahnban X3 X0) \wedge \\
& ((v3\_hahnban X3 X0) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& (u1\_struct\_0 X0) k1\_numbers)))))) \Rightarrow (\neg (k2\_partfun1 (u1\_struct\_0 \\
& X0) k1\_numbers X3 (u1\_struct\_0 X1) = X2) \wedge (\forall X4.(m1\_subset\_1 \\
& X4 (u1\_struct\_0 X0)) \Rightarrow (r1\_xxreal\_0 (k3\_funct\_2 (u1\_struct\_0 X0) \\
& k1\_numbers X3 X4) (k1\_normsp\_0 X0 X4))))))
\end{aligned}$$