

t29\_groeb\_3 (TMb-  
wqTta9iLXDEnhWGCM7htjHBSBke2Lo4d)

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Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k15\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v6\_relat\_2 : \iota \Rightarrow o$  be given. Let  $v8\_relat\_2 : \iota \Rightarrow o$  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  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_algstr\_0 : \iota \Rightarrow o$  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  $v1\_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v4\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_poly : \iota \Rightarrow o$  be given. Let  $k6\_groeb\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_groeb\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r2\_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_groeb\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_groeb\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(v3\_ordinal1 X0) \Rightarrow (\forall X1.((v1\_partfun1 X1 (k15\_pre\_poly \\
 & \quad X0)) \wedge ((v1\_relat\_2 X1) \wedge ((v4\_relat\_2 X1) \wedge ((v6\_relat\_2 X1) \wedge (( \\
 & \quad v8\_relat\_2 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k15\_pre\_poly \\
 & \quad X0) (k15\_pre\_poly X0)))))))))) \Rightarrow (\forall X2.((\neg v2\_struct\_0 X2) \wedge \\
 & \quad ((v13\_algstr\_0 X2) \wedge ((v3\_rlvect\_1 X2) \wedge ((v4\_rlvect\_1 X2) \wedge (l2\_algstr\_0 \\
 & \quad X2)))))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge ((v1\_funct\_2 X3 (k15\_pre\_poly \\
 & \quad X0) (u1\_struct\_0 X2)) \wedge ((v1\_polynom1 X3 (k15\_pre\_poly X0) X2) \wedge \\
 & \quad (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k15\_pre\_poly X0) ( \\
 & \quad \quad u1\_struct\_0 X2)))))))))) \Rightarrow (\forall X4.(m1\_subset\_1 X4 k5\_numbers) \Rightarrow \\
 & \quad ((r1\_xxreal\_0 X4 (k5\_card\_1 (k2\_polynom1 (k15\_pre\_poly X0) X2 \\
 & \quad X3))) \Rightarrow ((k2\_polynom1 (k15\_pre\_poly X0) X2 (k5\_groeb\_3 X0 X1 X2 X3 \\
 & \quad X4) = k3\_groeb\_3 X0 X1 X2 X3 X4) \wedge (k2\_polynom1 (k15\_pre\_poly X0) X2 \\
 & \quad (k6\_groeb\_3 X0 X1 X2 X3 X4) = k4\_groeb\_3 X0 X1 X2 X3 X4))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_partfun1\ X1\ (k15\_pre\_poly \\
& \quad X0)) \wedge ((v1\_relat\_2\ X1) \wedge ((v4\_relat\_2\ X1) \wedge ((v6\_relat\_2\ X1) \wedge (( \\
& \quad v8\_relat\_2\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k15\_pre\_poly \\
& \quad \quad X0)\ (k15\_pre\_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge \\
& \quad ((v13\_algstr\_0\ X2) \wedge ((v3\_rlvect\_1\ X2) \wedge ((v4\_rlvect\_1\ X2) \wedge (l2\_algstr\_0 \\
& \quad \quad X2)))))) \Rightarrow (\forall X3.((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ (k15\_pre\_poly \\
& \quad X0)\ (u1\_struct\_0\ X2)) \wedge ((v1\_polynom1\ X3\ (k15\_pre\_poly\ X0)\ X2) \wedge \\
& \quad (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k15\_pre\_poly\ X0)\ ( \\
& \quad \quad u1\_struct\_0\ X2)))))) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ k5\_numbers) \Rightarrow \\
& \quad ((r1\_xxreal\_0\ X4\ (k5\_card\_1\ (k2\_polynom1\ (k15\_pre\_poly\ X0)\ X2 \\
& \quad \quad X3))) \Rightarrow (\forall X5.((v1\_relat\_1\ X5) \wedge ((v4\_relat\_1\ X5\ X0) \wedge ((v1\_funct\_1 \\
& \quad X5) \wedge ((v1\_partfun1\ X5\ X0) \wedge ((v4\_valued\_0\ X5) \wedge (v2\_pre\_poly\ X5)))))) \Rightarrow \\
& \quad (\forall X6.((v1\_relat\_1\ X6) \wedge ((v4\_relat\_1\ X6\ X0) \wedge ((v1\_funct\_1 \\
& \quad X6) \wedge ((v1\_partfun1\ X6\ X0) \wedge ((v4\_valued\_0\ X6) \wedge (v2\_pre\_poly\ X6)))))) \Rightarrow \\
& \quad (((X5 \in k3\_groeb\_3\ X0\ X1\ X2\ X3\ X4) \wedge (X6 \in k4\_groeb\_3\ X0\ X1\ X2\ X3\ X4)) \Rightarrow \\
& \quad \quad (r2\_termord\ X0\ X1\ X6\ X5))))))
\end{aligned} \tag{2}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(v3\_ordinal1\ X0) \Rightarrow (\forall X1.((v1\_partfun1\ X1\ (k15\_pre\_poly \\
& \quad X0)) \wedge ((v1\_relat\_2\ X1) \wedge ((v4\_relat\_2\ X1) \wedge ((v6\_relat\_2\ X1) \wedge (( \\
& \quad v8\_relat\_2\ X1) \wedge (m1\_subset\_1\ X1\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k15\_pre\_poly \\
& \quad \quad X0)\ (k15\_pre\_poly\ X0)))))))))) \Rightarrow (\forall X2.((\neg v2\_struct\_0\ X2) \wedge \\
& \quad ((v13\_algstr\_0\ X2) \wedge ((v3\_rlvect\_1\ X2) \wedge ((v4\_rlvect\_1\ X2) \wedge (l2\_algstr\_0 \\
& \quad \quad X2)))))) \Rightarrow (\forall X3.((v1\_funct\_1\ X3) \wedge ((v1\_funct\_2\ X3\ (k15\_pre\_poly \\
& \quad X0)\ (u1\_struct\_0\ X2)) \wedge ((v1\_polynom1\ X3\ (k15\_pre\_poly\ X0)\ X2) \wedge \\
& \quad (m1\_subset\_1\ X3\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k15\_pre\_poly\ X0)\ ( \\
& \quad \quad u1\_struct\_0\ X2)))))) \Rightarrow (\forall X4.(m1\_subset\_1\ X4\ k5\_numbers) \Rightarrow \\
& \quad ((r1\_xxreal\_0\ X4\ (k5\_card\_1\ (k2\_polynom1\ (k15\_pre\_poly\ X0)\ X2 \\
& \quad \quad X3))) \Rightarrow (\forall X5.((v1\_relat\_1\ X5) \wedge ((v4\_relat\_1\ X5\ X0) \wedge ((v1\_funct\_1 \\
& \quad X5) \wedge ((v1\_partfun1\ X5\ X0) \wedge ((v4\_valued\_0\ X5) \wedge (v2\_pre\_poly\ X5)))))) \Rightarrow \\
& \quad (\forall X6.((v1\_relat\_1\ X6) \wedge ((v4\_relat\_1\ X6\ X0) \wedge ((v1\_funct\_1 \\
& \quad X6) \wedge ((v1\_partfun1\ X6\ X0) \wedge ((v4\_valued\_0\ X6) \wedge (v2\_pre\_poly\ X6)))))) \Rightarrow \\
& \quad (((X5 \in k2\_polynom1\ (k15\_pre\_poly\ X0)\ X2\ (k6\_groeb\_3\ X0\ X1\ X2\ X3\ X4)) \wedge \\
& \quad (X6 \in k2\_polynom1\ (k15\_pre\_poly\ X0)\ X2\ (k5\_groeb\_3\ X0\ X1\ X2\ X3\ X4)) \Rightarrow \\
& \quad \quad (r2\_termord\ X0\ X1\ X5\ X6))))))
\end{aligned}$$