

# t22\_groeb\_3

## (TMQKasv12hUuTy2zoYQ6Lrozn46shJpWz3f)

October 27, 2020

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  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_polynom1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_groeb\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_card\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_polynom1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_groeb\_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k4\_xboole\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $k14\_pre\_poly : \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v1\_finset\_1 : \iota \Rightarrow o$  be given. Let  $l2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $l1\_algstr\_0 : \iota \Rightarrow o$  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  $r1\_termord : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0. \forall X1. (k4\_xboole\_0 X0 X1 = k1\_xboole\_0) \Leftrightarrow (r1\_tarski X0 X1) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_xxreal\_0 X0) \wedge (v1\_xxreal\_0 X1)) \Rightarrow (r1\_xxreal\_0 X0 X0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski X0 X0 \quad (3)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (4)$$

Assume the following.

$$\forall X0.k15\_pre\_poly X0 = k14\_pre\_poly X0 \quad (5)$$

Assume the following.

$$\forall X0.\neg v1\_xboole\_0 (k14\_pre\_poly X0) \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((v3\_ordinal1 X0)\wedge((\neg v2\_struct\_0 \\ & X1)\wedge((v13\_algstr\_0 X1)\wedge((v3\_rlvect\_1 X1)\wedge((v4\_rlvect\_1 X1)\wedge \\ & (l2\_algstr\_0 X1))))))\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 (k15\_pre\_poly \\ & X0) (u1\_struct\_0 X1))\wedge((v1\_polynom1 X2 (k15\_pre\_poly X0) X1)\wedge \\ & (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k15\_pre\_poly X0) ( \\ & u1\_struct\_0 X1))))))))))\Rightarrow(v1\_finset\_1 (k2\_polynom1 (k15\_pre\_poly \\ & X0) X1 X2)) \end{aligned} \quad (7)$$

Assume the following.

$$\forall X0.(l2\_algstr\_0 X0)\Rightarrow((l2\_struct\_0 X0)\wedge(l1\_algstr\_0 X0)) \quad (8)$$

Assume the following.

$$\forall X0.(v1\_finset\_1 X0)\Rightarrow(m1\_subset\_1 (k5\_card\_1 X0) k4\_ordinal1) \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.((\neg v1\_xboole\_0 X0)\wedge((l2\_struct\_0 \\ & X1)\wedge((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 (u1\_struct\_0 X1))\wedge(m1\_subset\_1 \\ & X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 (u1\_struct\_0 X1))))))))))\Rightarrow(m1\_subset\_1 \\ & (k2\_polynom1 X0 X1 X2) (k1\_zfmisc\_1 X0)) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v3\_ordinal1 X0)\Rightarrow(\forall X1.((v1\_partfun1 X1 (k15\_pre\_poly \\ & X0))\wedge((v1\_relat\_2 X1)\wedge((v4\_relat\_2 X1)\wedge((v6\_relat\_2 X1)\wedge(( \\ & v8\_relat\_2 X1)\wedge(m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k15\_pre\_poly \\ & X0) (k15\_pre\_poly X0))))))))))\Rightarrow(\forall X2.((\neg v2\_struct\_0 X2)\wedge \\ & ((v13\_algstr\_0 X2)\wedge((v3\_rlvect\_1 X2)\wedge((v4\_rlvect\_1 X2)\wedge(l2\_algstr\_0 \\ & X2))))))\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge((v1\_funct\_2 X3 (k15\_pre\_poly \\ & X0) (u1\_struct\_0 X2))\wedge((v1\_polynom1 X3 (k15\_pre\_poly X0) X2)\wedge \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (k15\_pre\_poly X0) ( \\ & u1\_struct\_0 X2))))))))))\Rightarrow(\forall X4.(m1\_subset\_1 X4 k5\_numbers)\Rightarrow \\ & (k4\_groeb\_3 X0 X1 X2 X3 X4 = k4\_xboole\_0 (k2\_polynom1 (k15\_pre\_poly \\ & X0) X2 X3) (k3\_groeb\_3 X0 X1 X2 X3 X4)))) \end{aligned} \quad (11)$$

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\_finset\_1\ X5) \wedge (m1\_subset\_1\ X5\ (k1\_zfmisc\_1 \\
& \quad (k15\_pre\_poly\ X0)))) \Rightarrow ((X5 = k3\_groeb\_3\ X0\ X1\ X2\ X3\ X4) \Leftrightarrow ((r1\_tarski \\
& \quad \quad X5\ (k2\_polynom1\ (k15\_pre\_poly\ X0)\ X2\ X3)) \wedge ((k5\_card\_1\ X5 = X4) \wedge \\
& \quad \quad (\forall X6.((v1\_relat\_1\ X6) \wedge ((v4\_relat\_1\ X6\ X0) \wedge ((v1\_funct\_1 \\
& \quad \quad X6) \wedge ((v1\_partfun1\ X6\ X0) \wedge ((v4\_valued\_0\ X6) \wedge (v2\_pre\_poly\ X6)))))) \Rightarrow \\
& \quad (\forall X7.((v1\_relat\_1\ X7) \wedge ((v4\_relat\_1\ X7\ X0) \wedge ((v1\_funct\_1 \\
& \quad \quad X7) \wedge ((v1\_partfun1\ X7\ X0) \wedge ((v4\_valued\_0\ X7) \wedge (v2\_pre\_poly\ X7)))))) \Rightarrow \\
& \quad (((X6 \in X5) \wedge ((X7 \in k2\_polynom1\ (k15\_pre\_poly\ X0)\ X2\ X3) \wedge (r1\_termord \\
& \quad \quad X0\ X1\ X6\ X7))) \Rightarrow (X7 \in X5))))))))))
\end{aligned} \tag{12}$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ k4\_ordinal1) \Rightarrow (v7\_ordinal1\ X0) \tag{13}$$

Assume the following.

$$\forall X0.(v7\_ordinal1\ X0) \Rightarrow (v1\_xxreal\_0\ X0) \tag{14}$$

### Theorem 1

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