

## 197\_group\_2

(TMbW6V8yKegHH7SpL5PbPxSbNaqvNvkqnaL)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_group\_1 : \iota \Rightarrow o$  be given. Let  $v3\_group\_1 : \iota \Rightarrow o$  be given. Let  $l3\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $m1\_group\_2 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $g3\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k10\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u2\_algstr\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_xboole\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v4\_finsub\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_finsub\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v15\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $k8\_group\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_realset1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\ (m1\_group\_2 X2 X0) \Rightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 \\ X2)) \Rightarrow (m1\_group\_2 X1 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Rightarrow (k3\_xboole\_0 X0 X1 = X0) \quad (2)$$

Assume the following.

$$\forall X0. \forall X1. r1\_tarski (k3\_xboole\_0 X0 X1) X0 \quad (3)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v1\_xboole\_0 X0) \wedge (v4\_finsub\_1 \\ X0)) \wedge ((m1\_subset\_1 X1 X0) \wedge (m1\_subset\_1 X2 X0))) \Rightarrow (k3\_finsub\_1 \\ X0 X1 X2 = k3\_xboole\_0 X1 X2) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 \\ X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge ((m1\_group\_2 X1 X0) \wedge \\ (m1\_group\_2 X2 X0))) \Rightarrow (k10\_group\_2 X0 X1 X2 = k9\_group\_2 X0 X1 X2) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0. \neg v1\_xboole\_0 (k1\_zfmisc\_1 X0) \quad (6)$$

Assume the following.

$$\forall X0. v4\_finsub\_1 (k1\_zfmisc\_1 X0) \quad (7)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge (l3\_algstr\_0 \\ X0))) \Rightarrow (\forall X1. (m1\_group\_2 X1 X0) \Rightarrow ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\ X1) \wedge (l3\_algstr\_0 X1)))) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 \\ X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge ((m1\_group\_2 X1 X0) \wedge \\ (m1\_group\_2 X2 X0))) \Rightarrow ((v15\_algstr\_0 (k9\_group\_2 X0 X1 X2)) \wedge (m1\_group\_2 \\ (k9\_group\_2 X0 X1 X2) X0)) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge \\ ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge (m1\_group\_2 X1 X0)) \Rightarrow (m1\_subset\_1 \\ (k8\_group\_2 X0 X1) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 \\ X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge ((m1\_group\_2 X1 X0) \wedge \\ (m1\_group\_2 X2 X0))) \Rightarrow ((v15\_algstr\_0 (k10\_group\_2 X0 X1 X2)) \wedge ( \\ m1\_group\_2 (k10\_group\_2 X0 X1 X2) X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1. (m1\_group\_2 X1 X0) \Rightarrow (k8\_group\_2 \\ X0 X1 = u1\_struct\_0 X1)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge (l3\_algstr\_0 \\ X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 X1) \wedge (l3\_algstr\_0 \\ X1))) \Rightarrow ((m1\_group\_2 X1 X0) \Leftrightarrow ((r1\_tarski (u1\_struct\_0 X1) (u1\_struct\_0 \\ X0)) \wedge (u2\_algstr\_0 X1 = k1\_realset1 (u2\_algstr\_0 X0) (u1\_struct\_0 \\ X1)))))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\
& X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\
& (m1\_group\_2 X2 X0) \Rightarrow (\forall X3.((v15\_algstr\_0 X3) \wedge (m1\_group\_2 \\
& X3 X0)) \Rightarrow ((X3 = k9\_group\_2 X0 X1 X2) \Leftrightarrow (u1\_struct\_0 X3 = k3\_finsub\_1 \\
& (k1\_zfmisc\_1 (u1\_struct\_0 X0) (k8\_group\_2 X0 X1) (k8\_group\_2 \\
& X0 X2))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. (((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 \\
& X0) \wedge ((v3\_group\_1 X0) \wedge (l3\_algstr\_0 X0)))) \wedge ((m1\_group\_2 X1 X0) \wedge \\
& (m1\_group\_2 X2 X0))) \Rightarrow (k10\_group\_2 X0 X1 X2 = k10\_group\_2 X0 X2 X1)
\end{aligned} \tag{15}$$

Assume the following.

$$\begin{aligned}
& \forall X0. (l3\_algstr\_0 X0) \Rightarrow ((v15\_algstr\_0 X0) \Rightarrow (X0 = g3\_algstr\_0 \\
& (u1\_struct\_0 X0) (u2\_algstr\_0 X0)))
\end{aligned} \tag{16}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\
& X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(m1\_group\_2 X1 X0) \Rightarrow (\forall X2. \\
& (m1\_group\_2 X2 X0) \Rightarrow ((m1\_group\_2 X2 X1) \Leftrightarrow (g3\_algstr\_0 (u1\_struct\_0 \\
& (k10\_group\_2 X0 X2 X1)) (u2\_algstr\_0 (k10\_group\_2 X0 X2 X1)) = g3\_algstr\_0 \\
& (u1\_struct\_0 X2) (u2\_algstr\_0 X2))))))
\end{aligned}$$