

# l60\_group\_1 (TM- RDTz937itL9TxbB1VGv2rhY2NbSqYUNnF)

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Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. 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  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k5\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_group\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  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  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_binop\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $k4\_group\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_int\_2 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0.(v1\_int\_1 X0) \Rightarrow ((r1\_xreal\_0 k6\_numbers X0) \Rightarrow (X0 \in k5\_numbers)) \quad (1)$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5. \\ & ((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge (((v1\_funct\_1 X3) \wedge (( \\ & v1\_funct\_2 X3 (k2\_zfmisc\_1 X0 X1) X2) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1) X2)))))) \wedge ((m1\_subset\_1 X4 X0) \wedge \\ & (m1\_subset\_1 X5 X1)))))) \Rightarrow (k2\_binop\_1 X0 X1 X2 X3 X4 X5 = k1\_binop\_1 \\ & X3 X4 X5) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} \forall X0.(v7\_ordinal1\ X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0\ X1) \wedge \\ ((v2\_group\_1\ X1) \wedge ((v3\_group\_1\ X1) \wedge (l3\_algstr\_0\ X1)))) \Rightarrow (\forall X2. \\ (m1\_subset\_1\ X2\ (u1\_struct\_0\ X1)) \Rightarrow (k5\_group\_1\ X1\ X0\ (k2\_group\_1 \\ X1\ X2) = k2\_group\_1\ X1\ (k5\_group\_1\ X1\ X0\ X2)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge ((v2\_group\_1\ X0) \wedge \\ ((v3\_group\_1\ X0) \wedge (l3\_algstr\_0\ X0)))) \wedge (m1\_subset\_1\ X1\ (u1\_struct\_0 \\ X0))) \Rightarrow (k2\_group\_1\ X0\ (k2\_group\_1\ X0\ X1) = X1) \end{aligned} \quad (6)$$

Assume the following.

$$(\neg v1\_xboole\_0\ k4\_ordinal1) \wedge (v3\_ordinal1\ k4\_ordinal1) \quad (7)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0\ X0) \wedge (l1\_struct\_0\ X0)) \Rightarrow (\neg v1\_xboole\_0 \\ (u1\_struct\_0\ X0)) \quad (8)$$

Assume the following.

$$\forall X0.(l3\_algstr\_0\ X0) \Rightarrow (l1\_struct\_0\ X0) \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0) \wedge (l3\_algstr\_0\ X0)) \Rightarrow ((v1\_funct\_1 \\ (k4\_group\_1\ X0)) \wedge ((v1\_funct\_2\ (k4\_group\_1\ X0)\ (k2\_zfmisc\_1\ ( \\ u1\_struct\_0\ X0)\ k5\_numbers)\ (u1\_struct\_0\ X0)) \wedge (m1\_subset\_1\ ( \\ k4\_group\_1\ X0)\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ (k2\_zfmisc\_1\ (u1\_struct\_0 \\ X0)\ k5\_numbers)\ (u1\_struct\_0\ X0)))))) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(((\neg v2\_struct\_0\ X0) \wedge ((v2\_group\_1\ X0) \wedge \\ ((v3\_group\_1\ X0) \wedge (l3\_algstr\_0\ X0)))) \wedge (m1\_subset\_1\ X1\ (u1\_struct\_0 \\ X0))) \Rightarrow (m1\_subset\_1\ (k2\_group\_1\ X0\ X1)\ (u1\_struct\_0\ X0)) \end{aligned} \quad (11)$$

Assume the following.

$$\forall X0.(v1\_int\_1\ X0) \Rightarrow (m1\_subset\_1\ (k1\_int\_2\ X0)\ k5\_numbers) \quad (12)$$

Assume the following.

$$\begin{aligned} \forall X0.((\neg v2\_struct\_0\ X0) \wedge ((v2\_group\_1\ X0) \wedge ((v3\_group\_1 \\ X0) \wedge (l3\_algstr\_0\ X0)))) \Rightarrow (\forall X1.(v7\_ordinal1\ X1) \Rightarrow (\forall X2. \\ (m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (k5\_group\_1\ X0\ X1\ X2 = k1\_binop\_1 \\ (k4\_group\_1\ X0)\ X2\ X1))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_group\_1 X0) \wedge ((v3\_group\_1 \\
& \quad X0) \wedge (l3\_algstr\_0 X0)))) \Rightarrow (\forall X1.(v1\_int\_1 X1) \Rightarrow (\forall X2. \\
& \quad (m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (((r1\_xxreal\_0 k6\_numbers \\
& X1) \Rightarrow (k5\_group\_1 X0 X1 X2 = k2\_binop\_1 (u1\_struct\_0 X0) k5\_numbers \\
& \quad (u1\_struct\_0 X0) (k4\_group\_1 X0) X2 (k1\_int\_2 X1))) \wedge ((\neg r1\_xxreal\_0 \\
& k6\_numbers X1) \Rightarrow (k5\_group\_1 X0 X1 X2 = k2\_group\_1 X0 (k2\_binop\_1 \\
& \quad (u1\_struct\_0 X0) k5\_numbers (u1\_struct\_0 X0) (k4\_group\_1 X0) X2 \\
& \quad (k1\_int\_2 X1))))))
\end{aligned} \tag{14}$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \tag{15}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.(v1\_int\_1 X0) \Rightarrow (\forall X1.((\neg v2\_struct\_0 X1) \wedge ((v2\_group\_1 \\
& \quad X1) \wedge ((v3\_group\_1 X1) \wedge (l3\_algstr\_0 X1)))) \Rightarrow (\forall X2.(m1\_subset\_1 \\
& X2 (u1\_struct\_0 X1)) \Rightarrow (k5\_group\_1 X1 X0 (k2\_group\_1 X1 X2) = k2\_group\_1 \\
& \quad X1 (k5\_group\_1 X1 X0 X2))))
\end{aligned}$$