

t59_bcialg_5 (TMUmk-
TuBJ56B1SJnskaRPB9FP1kAJ3Cu29G)

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Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_numbers : \iota$ be given. Let $k5_numbers : \iota$ be given. Let $v8_bcialg_1 : \iota \Rightarrow o$ be given. Let $m1_bcialg_5 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $np_1 : \iota$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $r1_xxreal_0 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v2_struct_0 : \iota \Rightarrow o$ be given. Let $v3_bcialg_1 : \iota \Rightarrow o$ be given. Let $v4_bcialg_1 : \iota \Rightarrow o$ be given. Let $v5_bcialg_1 : \iota \Rightarrow o$ be given. Let $v7_bcialg_1 : \iota \Rightarrow o$ be given. Let $l2_bcialg_1 : \iota \Rightarrow o$ be given. Let $v7_ordinal1 : \iota \Rightarrow o$ be given. Let $k2_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_0 : \iota$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $k2_nat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_ordinal1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.(v1_xboole_0 X0) \Rightarrow (X0 = k1_xboole_0) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 k1_numbers k5_numbers) \Rightarrow (\forall X3.(m2_subset_1 X3 k1_numbers \\ & k5_numbers) \Rightarrow (\forall X4.((v8_bcialg_1 X4) \wedge (m1_bcialg_5 X4 X0 \\ & X1 X2 X3)) \Rightarrow ((X2 = k6_numbers) \Rightarrow ((r1_xxreal_0 X1 k6_numbers) \vee ((\\ & v8_bcialg_1 X4) \wedge (m1_bcialg_5 X4 k6_numbers np_1 k6_numbers np_1)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 k1_numbers k5_numbers) \Rightarrow (\forall X3.(m2_subset_1 X3 k1_numbers \\ & k5_numbers) \Rightarrow (\forall X4.((v8_bcialg_1 X4) \wedge (m1_bcialg_5 X4 X0 \\ & X1 X2 X3)) \Rightarrow ((v8_bcialg_1 X4) \wedge (m1_bcialg_5 X4 X3 X1 X2 X3)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2_subset_1 X0 k1_numbers k5_numbers) \Rightarrow (\forall X1. \\ & (m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 k1_numbers k5_numbers) \Rightarrow (\forall X3.(m2_subset_1 X3 k1_numbers \\ & k5_numbers) \Rightarrow (\forall X4.((v8_bcialg_1 X4) \wedge (m1_bcialg_5 X4 X0 \\ & X1 X2 X3)) \Rightarrow ((v8_bcialg_1 X4) \wedge (m1_bcialg_5 X4 X0 X1 X1 X3)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2_struct_0 X0) \wedge ((v3_bcialg_1 X0) \wedge ((v4_bcialg_1 \\ & X0) \wedge ((v5_bcialg_1 X0) \wedge ((v7_bcialg_1 X0) \wedge (l2_bcialg_1 X0)))))) \Rightarrow \\ & (\forall X1.(m2_subset_1 X1 k1_numbers k5_numbers) \Rightarrow (\forall X2. \\ & (m2_subset_1 X2 k1_numbers k5_numbers) \Rightarrow (\forall X3.(m2_subset_1 \\ & X3 k1_numbers k5_numbers) \Rightarrow (\forall X4.(m2_subset_1 X4 k1_numbers \\ & k5_numbers) \Rightarrow ((m1_bcialg_5 X0 X1 X2 X3 X4) \Leftrightarrow (m1_bcialg_5 X0 X3 X4 \\ & X1 X2)))))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7_ordinal1 X0) \Rightarrow (\forall X1.(v7_ordinal1 X1) \Rightarrow (\neg \\ & (r1_xxreal_0 X0 X1) \wedge (\forall X2.(v7_ordinal1 X2) \Rightarrow (X1 \neq k2_xcmplx_0 \\ & X0 X2)))) \end{aligned} \quad (6)$$

Assume the following.

$$(m2_subset_1 np_0 k1_numbers k5_numbers) \wedge ((m1_subset_1 np_0 k5_numbers) \wedge (m1_subset_1 np_0 k1_numbers)) \quad (7)$$

Assume the following.

$$v1_xboole_0 np_0 \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1_xboole_0 X0) \wedge ((\neg v1_xboole_0 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 X0)))) \Rightarrow (\forall X2.(m2_subset_1 \\ & X2 X0 X1) \Leftrightarrow (m1_subset_1 X2 X1)) \end{aligned} \quad (9)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (10)$$

Assume the following.

$$k5_numbers = k4_ordinal1 \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((m1_subset_1 X0 k5_numbers) \wedge (v7_ordinal1 \\ & X1)) \Rightarrow (k2_nat_1 X0 X1 = k2_xcmplx_0 X0 X1) \end{aligned} \quad (12)$$

Assume the following.

$$(\neg v1_xboole_0 \ k4_ordinal1) \wedge (v3_ordinal1 \ k4_ordinal1) \quad (13)$$

Assume the following.

$$\forall X0. \forall X1. ((v7_ordinal1 \ X0) \wedge ((\neg v1_xboole_0 \ X1) \wedge (v7_ordinal1 \ X1))) \Rightarrow (\neg v1_xboole_0 \ (k2_xcmplx_0 \ X0 \ X1)) \quad (14)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((m1_subset_1 \ X0 \\ & k5_numbers) \wedge ((m1_subset_1 \ X1 \ k5_numbers) \wedge ((m1_subset_1 \ X2 \ k5_numbers) \wedge \\ & (m1_subset_1 \ X3 \ k5_numbers)))) \Rightarrow (\forall X4. (m1_bcialg_5 \ X4 \ X0 \\ & X1 \ X2 \ X3) \Rightarrow ((\neg v2_struct_0 \ X4) \wedge ((v3_bcialg_1 \ X4) \wedge ((v4_bcialg_1 \\ & X4) \wedge ((v5_bcialg_1 \ X4) \wedge ((v7_bcialg_1 \ X4) \wedge (l2_bcialg_1 \ X4))))))) \end{aligned} \quad (15)$$

Assume the following.

$$m2_subset_1 \ k6_numbers \ k1_numbers \ k5_numbers \quad (16)$$

Assume the following.

$$m1_subset_1 \ k5_numbers \ (k1_zfmisc_1 \ k1_numbers) \quad (17)$$

Assume the following.

$$k1_xboole_0 = the \ (\lambda X0 : \iota. v1_xboole_0 \ X0) \quad (18)$$

Assume the following.

$$\forall X0. \forall X1. ((m1_subset_1 \ X0 \ k5_numbers) \wedge (v7_ordinal1 \ X1)) \Rightarrow (k2_nat_1 \ X0 \ X1 = k2_nat_1 \ X1 \ X0) \quad (19)$$

Assume the following.

$$\forall X0. (m1_subset_1 \ X0 \ k4_ordinal1) \Rightarrow (v7_ordinal1 \ X0) \quad (20)$$

Assume the following.

$$\forall X0. (v1_xboole_0 \ X0) \Rightarrow (v7_ordinal1 \ X0) \quad (21)$$

Assume the following.

$$\forall X0. (v1_xboole_0 \ X0) \Rightarrow (\forall X1. (m1_subset_1 \ X1 \ (k1_zfmisc_1 \ X0)) \Rightarrow (v1_xboole_0 \ X1)) \quad (22)$$

Theorem 1

$$\begin{aligned} & \forall X0. (m2_subset_1 \ X0 \ k1_numbers \ k5_numbers) \Rightarrow (\forall X1. \\ & (m2_subset_1 \ X1 \ k1_numbers \ k5_numbers) \Rightarrow (\forall X2. (m2_subset_1 \\ & X2 \ k1_numbers \ k5_numbers) \Rightarrow (\forall X3. (m2_subset_1 \ X3 \ k1_numbers \\ & k5_numbers) \Rightarrow (\forall X4. ((v8_bcialg_1 \ X4) \wedge (m1_bcialg_5 \ X4 \ X0 \\ & X1 \ X2 \ X3)) \Rightarrow ((X0 = k6_numbers) \Rightarrow ((X3 = k6_numbers) \vee ((v8_bcialg_1 \\ & X4) \wedge (m1_bcialg_5 \ X4 \ k6_numbers \ np_1 \ k6_numbers \ np_1))))))) \end{aligned}$$