

t77_mcart_1 (TMaKvqmT- FAf6JUCQhdBnUn72MipTtYD2dYT)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k4_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_xtuple_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k6_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k5_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $k4_mcart_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_xtuple_0 : \iota \Rightarrow \iota$ be given. Let $v3_xtuple_0 : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (k7_mcart_1 X0 X1 \\ & X2 X3 X4 = k2_xtuple_0 X4) \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (k6_mcart_1 X0 X1 \\ & X2 X3 X4 = k5_xtuple_0 X4) \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (k5_mcart_1 X0 X1 \\ & X2 X3 X4 = k8_xtuple_0 X4) \end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (k4_mcart_1 X0 X1 \\ & X2 X3 X4 = k7_xtuple_0 X4) \end{aligned} \tag{4}$$

Assume the following.

$$\forall X0.(v3_xtuple_0 X0) \Rightarrow (k6_xtuple_0 (k7_xtuple_0 X0) (k8_xtuple_0 X0) (k5_xtuple_0 X0) (k2_xtuple_0 X0) = X0) \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (m1_subset_1 (k7_mcart_1 \\ & X0 X1 X2 X3 X4) X3) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (m1_subset_1 (k6_mcart_1 \\ & X0 X1 X2 X3 X4) X2) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (m1_subset_1 (k5_mcart_1 \\ & X0 X1 X2 X3 X4) X1) \end{aligned} \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((\neg v1_xboole_0 \\ & X0) \wedge ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge ((\neg v1_xboole_0 X3) \wedge \\ & (m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)))))) \Rightarrow (m1_subset_1 (k4_mcart_1 \\ & X0 X1 X2 X3 X4) X0) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1_xboole_0 X0) \wedge \\ & ((\neg v1_xboole_0 X1) \wedge ((\neg v1_xboole_0 X2) \wedge (\neg v1_xboole_0 X3)))) \Rightarrow \\ & (\forall X4.(m1_subset_1 X4 (k4_zfmisc_1 X0 X1 X2 X3)) \Rightarrow (v3_xtuple_0 \\ & X4)) \end{aligned} \quad (10)$$

Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.(\neg v1_xboole_0 X1) \Rightarrow (\forall X2.(\neg v1_xboole_0 \\ & X2) \Rightarrow (\forall X3.(\neg v1_xboole_0 X3) \Rightarrow (\forall X4.(\neg v1_xboole_0 \\ & X4) \Rightarrow (\forall X5.(m1_subset_1 X5 (k4_zfmisc_1 X1 X2 X3 X4)) \Rightarrow ((\forall X6. \\ & (m1_subset_1 X6 X1) \Rightarrow (\forall X7.(m1_subset_1 X7 X2) \Rightarrow (\forall X8. \\ & (m1_subset_1 X8 X3) \Rightarrow (\forall X9.(m1_subset_1 X9 X4) \Rightarrow ((X5 = k6_xtuple_0 \\ & X6 X7 X8 X9) \Rightarrow (X0 = X8)))))) \Rightarrow (X0 = k6_mcart_1 X1 X2 X3 X4 X5)))))) \end{aligned}$$