

t18_seq_1
(TMV4QdrT6TXauvZK4cSmNQv1D612MQEdFkr)

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Let $v1_xreal_0 : \iota \Rightarrow o$ 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 $k5_numbers : \iota$ be given. Let $k1_numbers : \iota$ 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 $r2_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k26_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_xcmplx_0 : \iota \Rightarrow o$ be given. Let $k3_xcmplx_0 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_ordinal1 : \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k24_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k18_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_relat_1 : \iota \Rightarrow o$ be given. Let $v3_valued_0 : \iota \Rightarrow o$ be given. Let $k1_funct_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1_valued_0 : \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v1_partfun1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_membered : \iota \Rightarrow o$ be given. Assume the following.

$$\begin{aligned}
& \forall X0.(v1_xreal_0 X0) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 \\
& X1 k5_numbers k1_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
& k5_numbers k1_numbers)))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge ((\\
& v1_funct_2 X2 k5_numbers k1_numbers) \wedge (m1_subset_1 X2 (k1_zfmisc_1 \\
& (k2_zfmisc_1 k5_numbers k1_numbers)))) \Rightarrow ((r2_funct_2 k5_numbers \\
& k1_numbers X1 (k26_valued_1 k5_numbers k1_numbers X2 X0)) \Leftrightarrow (\forall X3. \\
& (m2_subset_1 X3 k1_numbers k5_numbers) \Rightarrow (k1_seq_1 X1 X3 = k4_real_1 \\
& X0 (k1_seq_1 X2 X3))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& (\forall X1.((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& (\forall X2.((v1_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge \\
& (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& ((r2_funct_2 k5_numbers k1_numbers X0 (k20_valued_1 k5_numbers \\
& k1_numbers k1_numbers X1 X2)) \Leftrightarrow (\forall X3.(m2_subset_1 X3 k1_numbers \\
& k5_numbers) \Rightarrow (k1_seq_1 X0 X3 = k8_real_1 (k1_seq_1 X1 X3) (k1_seq_1 \\
& X2 X3))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow ((r2_funct_2 X0 X1 X2 \\
& X3) \Rightarrow (r2_funct_2 X0 X1 X3 X2))
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. ((v1_xcmplx_0 X0) \wedge ((v1_xcmplx_0 \\
& X1) \wedge (v1_xcmplx_0 X2))) \Rightarrow (k3_xcmplx_0 (k3_xcmplx_0 X0 X1) X2 = k3_xcmplx_0 \\
& X0 (k3_xcmplx_0 X1 X2))
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. \forall X2. \forall X3. (((v1_funct_1 X2) \wedge \\
& ((v1_funct_2 X2 X0 X1) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 \\
& X0 X1)))))) \wedge ((v1_funct_1 X3) \wedge ((v1_funct_2 X3 X0 X1) \wedge (m1_subset_1 \\
& X3 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))))) \Rightarrow (r2_funct_2 X0 X1 X2 X2)
\end{aligned} \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((m1_subset_1 X0 k1_numbers) \wedge (v1_xreal_0 \\
& X1)) \Rightarrow (k8_real_1 X0 X1 = k3_xcmplx_0 X0 X1)
\end{aligned} \tag{6}$$

Assume the following.

$$k5_numbers = k4_ordinal1 \tag{7}$$

Assume the following.

$$\begin{aligned}
& \forall X0. \forall X1. ((v1_xreal_0 X0) \wedge (m1_subset_1 X1 k1_numbers)) \Rightarrow \\
& (k4_real_1 X0 X1 = k3_xcmplx_0 X0 X1)
\end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v3_membered\ X1) \wedge \\ & (((v1_funct_1\ X2) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ & X0\ X1)))) \wedge (v1_xreal_0\ X3))) \Rightarrow (k26_valued_1\ X0\ X1\ X2\ X3 = k24_valued_1 \\ & X2\ X3) \end{aligned} \quad (9)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. ((v3_membered \\ & X1) \wedge ((v3_membered\ X2) \wedge (((v1_funct_1\ X3) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))) \wedge ((v1_funct_1\ X4) \wedge (m1_subset_1\ X4\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X2))))))) \Rightarrow (k20_valued_1\ X0\ X1\ X2\ X3\ X4 = k18_valued_1 \\ & X3\ X4) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1\ X0) \wedge ((v1_funct_1\ X0) \wedge (v3_valued_0 \\ & X0))) \Rightarrow (k1_seq_1\ X0\ X1 = k1_funct_1\ X0\ X1) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1\ X0) \wedge ((v1_funct_1\ X0) \wedge (v3_valued_0 \\ & X0))) \Rightarrow (v1_xreal_0\ (k1_funct_1\ X0\ X1)) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_relat_1\ X0) \wedge ((v1_funct_1\ X0) \wedge (v1_valued_0 \\ & X0))) \Rightarrow (v1_xcmplx_0\ (k1_funct_1\ X0\ X1)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. (((\neg v1_xboole_0 \\ & X1) \wedge (v3_membered\ X1)) \wedge (((v1_funct_1\ X2) \wedge ((v1_funct_2\ X2\ X0\ X1) \wedge \\ & (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))))) \wedge (v1_xreal_0 \\ & X3))) \Rightarrow ((v1_funct_1\ (k24_valued_1\ X2\ X3)) \wedge (v1_partfun1\ (k24_valued_1 \\ & X2\ X3)\ X0)) \end{aligned} \quad (14)$$

Assume the following.

$$v3_membered\ k1_numbers \quad (15)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. (((\neg v1_xboole_0 \\ & X1) \wedge (v3_membered\ X1)) \wedge (((\neg v1_xboole_0\ X2) \wedge (v3_membered\ X2)) \wedge \\ & (((v1_funct_1\ X3) \wedge ((v1_funct_2\ X3\ X0\ X1) \wedge (m1_subset_1\ X3\ (k1_zfmisc_1 \\ & (k2_zfmisc_1\ X0\ X1)))))) \wedge ((v1_funct_1\ X4) \wedge ((v1_funct_2\ X4\ X0\ X2) \wedge \\ & (m1_subset_1\ X4\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X2))))))) \Rightarrow ((v1_funct_1 \\ & (k18_valued_1\ X3\ X4)) \wedge (v1_partfun1\ (k18_valued_1\ X3\ X4)\ X0)) \end{aligned} \quad (16)$$

Assume the following.

$$\neg v1_xboole_0 \ k1_numbers \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xreal_0 \ X0) \wedge (m1_subset_1 \ X1 \ k1_numbers)) \Rightarrow (m1_subset_1 \ (k4_real_1 \ X0 \ X1) \ k1_numbers) \quad (18)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((v3_membered \ X1) \wedge \\ & (((v1_funct_1 \ X2) \wedge (m1_subset_1 \ X2 \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & X0 \ X1)))) \wedge (v1_xreal_0 \ X3))) \Rightarrow ((v1_funct_1 \ (k26_valued_1 \ X0 \ X1 \\ & X2 \ X3)) \wedge (m1_subset_1 \ (k26_valued_1 \ X0 \ X1 \ X2 \ X3) \ (k1_zfmisc_1 \ (k2_zfmisc_1 \\ & X0 \ k1_numbers)))) \end{aligned} \quad (19)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1) \wedge ((v3_membered \ X2) \wedge (((v1_funct_1 \ X3) \wedge (m1_subset_1 \ X3 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ X0 \ X1)))) \wedge ((v1_funct_1 \ X4) \wedge (m1_subset_1 \ X4 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ X0 \ X2)))))) \Rightarrow ((v1_funct_1 \ (k20_valued_1 \ X0 \ X1 \ X2 \\ & X3 \ X4)) \wedge (m1_subset_1 \ (k20_valued_1 \ X0 \ X1 \ X2 \ X3 \ X4) \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ X0 \ k1_numbers)))) \end{aligned} \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v3_valued_0 \ X0))) \Rightarrow (m1_subset_1 \ (k1_seq_1 \ X0 \ X1) \ k1_numbers) \quad (21)$$

Assume the following.

$$\forall X0.\forall X1.((v1_xcmplx_0 \ X0) \wedge (v1_xcmplx_0 \ X1)) \Rightarrow (k3_xcmplx_0 \ X0 \ X1 = k3_xcmplx_0 \ X1 \ X0) \quad (22)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.\forall X4.((v3_membered \\ & X1) \wedge ((v3_membered \ X2) \wedge (((v1_funct_1 \ X3) \wedge (m1_subset_1 \ X3 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ X0 \ X1)))) \wedge ((v1_funct_1 \ X4) \wedge (m1_subset_1 \ X4 \ (k1_zfmisc_1 \\ & (k2_zfmisc_1 \ X0 \ X2)))))) \Rightarrow (k20_valued_1 \ X0 \ X1 \ X2 \ X3 \ X4 = k20_valued_1 \\ & X0 \ X1 \ X2 \ X4 \ X3) \end{aligned} \quad (23)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.(((v1_relat_1 \ X0) \wedge ((v1_funct_1 \ X0) \wedge (v1_valued_0 \\ & X0))) \wedge ((v1_relat_1 \ X1) \wedge ((v1_funct_1 \ X1) \wedge (v1_valued_0 \ X1)))) \Rightarrow \\ & (k18_valued_1 \ X0 \ X1 = k18_valued_1 \ X1 \ X0) \end{aligned} \quad (24)$$

Assume the following.

$$\forall X0.(v3_membered\ X0) \Rightarrow (v1_membered\ X0) \quad (25)$$

Assume the following.

$$\forall X0.(v1_xreal_0\ X0) \Rightarrow (v1_xcmplx_0\ X0) \quad (26)$$

Assume the following.

$$\forall X0.(m1_subset_1\ X0\ k1_numbers) \Rightarrow (v1_xreal_0\ X0) \quad (27)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow (v1_relat_1\ X2) \end{aligned} \quad (28)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.(m1_subset_1\ X2\ (k1_zfmisc_1 \\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow ((v1_partfun1\ X2\ X0) \Rightarrow (v1_funct_2\ X2\ X0\ X1)) \end{aligned} \quad (29)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(v3_membered\ X1) \Rightarrow (\forall X2.(m1_subset_1 \\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow (v3_valued_0\ X2)) \end{aligned} \quad (30)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.(v1_membered\ X1) \Rightarrow (\forall X2.(m1_subset_1 \\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1))) \Rightarrow (v1_valued_0\ X2)) \end{aligned} \quad (31)$$

Theorem 1

$$\begin{aligned} \forall X0.(v1_xreal_0\ X0) \Rightarrow (\forall X1.((v1_funct_1\ X1) \wedge ((v1_funct_2 \\ X1\ k5_numbers\ k1_numbers) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1 \\ k5_numbers\ k1_numbers)))))) \Rightarrow (\forall X2.((v1_funct_1\ X2) \wedge ((\\ v1_funct_2\ X2\ k5_numbers\ k1_numbers) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1 \\ (k2_zfmisc_1\ k5_numbers\ k1_numbers)))))) \Rightarrow (r2_funct_2\ k5_numbers \\ k1_numbers\ (k26_valued_1\ k5_numbers\ k1_numbers\ (k20_valued_1 \\ k5_numbers\ k1_numbers\ k1_numbers\ X1\ X2)\ X0)\ (k20_valued_1\ k5_numbers \\ k1_numbers\ k1_numbers\ (k26_valued_1\ k5_numbers\ k1_numbers\ X1 \\ X0)\ X2)))) \end{aligned}$$