

t18_pdiff_3 (TMH- WxdTR2wzFmXRGCKjmEXezvJmPZBm2TNg)

October 27, 2020

Let $v1_funct_1 : \iota \Rightarrow o$ 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 $k1_euclid : \iota \Rightarrow \iota$ be given. Let $np_2 : \iota$ be given. Let $k1_numbers : \iota$ be given. Let $m2_finseq_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $m1_rcomp_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r2_pdiff_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $np_1 : \iota$ be given. Let $v2_relat_1 : \iota \Rightarrow o$ be given. Let $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k5_numbers : \iota$ be given. Let $v1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k6_numbers : \iota$ be given. Let $v3_funct_1 : \iota \Rightarrow o$ be given. Let $k2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_tarski : \iota \Rightarrow \iota$ be given. Let $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_comseq_2 : \iota \Rightarrow o$ be given. Let $k20_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k37_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k47_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k8_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_pdiff_3 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_seq_2 : \iota \Rightarrow \iota$ be given. Let $k10_finseq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r3_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k11_pdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v2_xreal_0 : \iota \Rightarrow o$ be given. Let $m2_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $k1_xboole_0 : \iota$ be given. Let $k1_seq_2 : \iota \Rightarrow \iota$ be given. Let $v3_fdiff_1 : \iota \Rightarrow o$ be given. Let $v2_fdiff_1 : \iota \Rightarrow o$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k7_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m1_subset_1 X0 k1_numbers) \Rightarrow (\forall X1.((v2_relat_1 \\
 & X1) \wedge ((v1_funct_1 X1) \wedge ((v1_funct_2 X1 k5_numbers k1_numbers) \wedge \\
 & ((v1_fdiff_1 X1 k6_numbers) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 \\
 & k5_numbers k1_numbers)))))) \Rightarrow (\forall X2.((v1_funct_1 X2) \wedge \\
 & ((v3_funct_1 X2) \wedge ((v1_funct_2 X2 k5_numbers k1_numbers) \wedge (m1_subset_1 \\
 & X2 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow ((\\
 & k2_relset_1 k1_numbers X2 = k1_tarski X0) \Rightarrow ((v2_comseq_2 X2) \wedge (\\
 & (k2_seq_2 X2 = X0) \wedge ((v2_comseq_2 (k3_valued_1 k5_numbers k1_numbers \\
 & k1_numbers X1 X2)) \wedge (k2_seq_2 (k3_valued_1 k5_numbers k1_numbers \\
 & k1_numbers X1 X2) = X0))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& (k1_relset_1 (k1_euclid\ np_2) (k1_pdiff_1\ np_2\ np_2) = k1_euclid \\
& np_2) \wedge ((k2_relset_1\ k1_numbers\ (k1_pdiff_1\ np_2\ np_2) = k1_numbers) \wedge \\
& (\forall X0.(m1_subset_1\ X0\ k1_numbers) \Rightarrow (\forall X1.(m1_subset_1 \\
& X1\ k1_numbers) \Rightarrow (k1_seq_1\ (k1_pdiff_1\ np_2\ np_2)\ (k10_finseq_1 \\
& X0\ X1) = X1)))) \\
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1\ X0) \wedge (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1 \\
& (k1_euclid\ np_2)\ k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2\ X1 \\
& k1_numbers\ (k1_euclid\ np_2)) \Rightarrow (\forall X2.(m1_rcomp_1\ X2\ (k1_seq_1 \\
& (k1_pdiff_1\ np_2\ np_2)\ X1) \Rightarrow (((r3_pdiff_1\ np_2\ np_2\ X0\ X1) \wedge \\
& (r1_tarski\ X2\ (k1_relset_1\ k1_numbers\ (k1_pdiff_2\ np_2\ np_2 \\
& X0\ X1)))) \Rightarrow (\forall X3.((v2_relat_1\ X3) \wedge ((v1_funct_1\ X3) \wedge ((v1_funct_2 \\
& X3\ k5_numbers\ k1_numbers) \wedge ((v1_fdiff_1\ X3\ k6_numbers) \wedge (m1_subset_1 \\
& X3\ (k1_zfmisc_1\ (k2_zfmisc_1\ k5_numbers\ k1_numbers)))))) \Rightarrow (\\
& \forall X4.((v1_funct_1\ X4) \wedge ((v3_funct_1\ X4) \wedge ((v1_funct_2\ X4 \\
& k5_numbers\ k1_numbers) \wedge (m1_subset_1\ X4\ (k1_zfmisc_1\ (k2_zfmisc_1 \\
& k5_numbers\ k1_numbers)))))) \Rightarrow (((k2_relset_1\ k1_numbers\ X4 = k1_tarski \\
& (k1_seq_1\ (k1_pdiff_1\ np_2\ np_2)\ X1) \wedge (r1_tarski\ (k2_relset_1 \\
& k1_numbers\ (k3_valued_1\ k5_numbers\ k1_numbers\ k1_numbers\ X3\ X4)) \\
& X2)) \Rightarrow ((v2_comseq_2\ (k20_valued_1\ k5_numbers\ k1_numbers\ k1_numbers \\
& (k37_valued_1\ k5_numbers\ k1_numbers\ X3)\ (k47_valued_1\ k5_numbers \\
& k1_numbers\ k1_numbers\ (k8_funct_2\ k5_numbers\ k1_numbers\ k1_numbers \\
& (k3_valued_1\ k5_numbers\ k1_numbers\ k1_numbers\ X3\ X4)\ (k1_pdiff_2 \\
& np_2\ np_2\ X0\ X1))\ (k8_funct_2\ k5_numbers\ k1_numbers\ k1_numbers \\
& X4\ (k1_pdiff_2\ np_2\ np_2\ X0\ X1)))) \wedge (k11_pdiff_1\ np_2\ np_2 \\
& X0\ X1 = k2_seq_2\ (k20_valued_1\ k5_numbers\ k1_numbers\ k1_numbers \\
& (k37_valued_1\ k5_numbers\ k1_numbers\ X3)\ (k47_valued_1\ k5_numbers \\
& k1_numbers\ k1_numbers\ (k8_funct_2\ k5_numbers\ k1_numbers\ k1_numbers \\
& (k3_valued_1\ k5_numbers\ k1_numbers\ k1_numbers\ X3\ X4)\ (k1_pdiff_2 \\
& np_2\ np_2\ X0\ X1))\ (k8_funct_2\ k5_numbers\ k1_numbers\ k1_numbers \\
& X4\ (k1_pdiff_2\ np_2\ np_2\ X0\ X1))))))))) \\
\end{aligned} \tag{3}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m2_finseq_2\ X0\ k1_numbers\ (k1_euclid\ np_2)) \Rightarrow (\forall X1. \\
& ((v1_funct_1\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ (\\
& k1_euclid\ np_2)\ k1_numbers)))) \Rightarrow ((r2_pdiff_3\ X1\ X0) \Rightarrow (k3_pdiff_3 \\
& X1\ X0 = k11_pdiff_1\ np_2\ np_2\ (k1_pdiff_3\ np_1\ np_2\ X1)\ X0)) \\
\end{aligned} \tag{4}$$

Assume the following.

$$\begin{aligned} \forall X0.(m2_finseq_2 X0 k1_numbers (k1_euclid np_2)) \Rightarrow (\forall X1. \\ ((v1_funct_1 X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 (\\ k1_euclid np_2) k1_numbers)))) \Rightarrow ((r2_pdiff_3 X1 X0) \Leftrightarrow (r3_pdiff_1 \\ np_2 np_2 (k1_pdiff_3 np_1 np_2 X1) X0))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} ((v2_xxreal_0 np_2) \wedge (m2_subset_1 np_2 k1_numbers k5_numbers)) \wedge \\ ((m1_subset_1 np_2 k5_numbers) \wedge (m1_subset_1 np_2 k1_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$\neg v1_xboole_0 np_2 \quad (7)$$

Assume the following.

$$\begin{aligned} ((v2_xxreal_0 np_1) \wedge (m2_subset_1 np_1 k1_numbers k5_numbers)) \wedge \\ ((m1_subset_1 np_1 k5_numbers) \wedge (m1_subset_1 np_1 k1_numbers)) \end{aligned} \quad (8)$$

Assume the following.

$$k6_numbers = k1_xboole_0 \quad (9)$$

Assume the following.

$$\begin{aligned} \forall X0.((v1_funct_1 X0) \wedge ((v1_funct_2 X0 k5_numbers k1_numbers) \wedge \\ (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\ (k2_seq_2 X0 = k1_seq_2 X0) \end{aligned} \quad (10)$$

Assume the following.

$$\begin{aligned} \forall X0.\forall X1.\forall X2.((m1_subset_1 X0 k5_numbers) \wedge \\ (((\neg v1_xboole_0 X1) \wedge (m1_subset_1 X1 k5_numbers)) \wedge ((v1_funct_1 \\ X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ k1_numbers)))))) \Rightarrow ((v1_funct_1 (k1_pdiff_3 X0 X1 X2)) \wedge ((v1_funct_2 \\ (k1_pdiff_3 X0 X1 X2) (k1_euclid X1) k1_numbers) \wedge (m1_subset_1 \\ (k1_pdiff_3 X0 X1 X2) (k1_zfmisc_1 (k2_zfmisc_1 (k1_euclid X1) \\ k1_numbers)))))) \end{aligned} \quad (11)$$

Assume the following.

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad (k1_euclid\ np_2) k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2 X1 \\
& \quad k1_numbers (k1_euclid\ np_2)) \Rightarrow ((r2_pdiff_3 X0 X1) \Leftrightarrow (\exists X2. \\
& \quad (m1_subset_1 X2 k1_numbers) \wedge (\exists X3.(m1_subset_1 X3 k1_numbers) \wedge \\
& \quad ((X1 = k10_finseq_1 X2 X3) \wedge (\exists X4.(m1_rcomp_1 X4 X3) \wedge ((r1_tarski \\
& \quad X4 (k1_relset_1 k1_numbers (k1_pdiff_2\ np_2\ np_2) (k1_pdiff_3 \\
& \quad np_1\ np_2 X0) X1))) \wedge (\exists X5.((v1_funct_1 X5) \wedge ((v3_fdiff_1 \\
& \quad X5) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge \\
& \quad (\exists X6.((v1_funct_1 X6) \wedge ((v2_fdiff_1 X6) \wedge (m1_subset_1 \\
& \quad X6 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))))) \wedge (\forall X7. \\
& \quad (m1_subset_1 X7 k1_numbers) \Rightarrow ((X7 \in X4) \Rightarrow (k9_real_1 (k1_seq_1 (\\
& \quad k1_pdiff_2\ np_2\ np_2) (k1_pdiff_3\ np_1\ np_2 X0) X1) X7) (k1_seq_1 \\
& \quad (k1_pdiff_2\ np_2\ np_2) (k1_pdiff_3\ np_1\ np_2 X0) X1) X3) = k7_real_1 \\
& \quad (k1_seq_1 X5 (k9_real_1 X7 X3)) (k1_seq_1 X6 (k9_real_1 X7 X3))))))))) \wedge \\
& \quad (12)
\end{aligned}$$

Theorem 1

$$\begin{aligned}
& \forall X0.((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad (k1_euclid\ np_2) k1_numbers)))) \Rightarrow (\forall X1.(m2_finseq_2 X1 \\
& \quad k1_numbers (k1_euclid\ np_2)) \Rightarrow (\forall X2.(m1_rcomp_1 X2 (k1_seq_1 \\
& \quad (k1_pdiff_1\ np_2\ np_2) X1)) \Rightarrow (((r2_pdiff_3 X0 X1) \wedge (r1_tarski \\
& \quad X2 (k1_relset_1 k1_numbers (k1_pdiff_2\ np_2\ np_2) (k1_pdiff_3 \\
& \quad np_1\ np_2 X0) X1))) \Rightarrow (\forall X3.((v2_relat_1 X3) \wedge ((v1_funct_1 \\
& \quad X3) \wedge ((v1_funct_2 X3 k5_numbers k1_numbers) \wedge ((v1_fdiff_1 X3 k6_numbers) \wedge \\
& \quad (m1_subset_1 X3 (k1_zfmisc_1 (k2_zfmisc_1 k5_numbers k1_numbers)))))) \Rightarrow \\
& \quad (\forall X4.((v1_funct_1 X4) \wedge ((v3_funct_1 X4) \wedge ((v1_funct_2 \\
& \quad X4 k5_numbers k1_numbers) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\
& \quad k5_numbers k1_numbers)))))) \Rightarrow (((k2_relset_1 k1_numbers X4 = k1_tarski \\
& \quad (k1_seq_1 (k1_pdiff_1\ np_2\ np_2) X1)) \wedge (r1_tarski (k2_relset_1 \\
& \quad k1_numbers (k3_valued_1 k5_numbers k1_numbers k1_numbers k1_numbers X3 X4)) \\
& \quad X2)) \Rightarrow ((v2_comseq_2 (k20_valued_1 k5_numbers k1_numbers k1_numbers \\
& \quad (k37_valued_1 k5_numbers k1_numbers X3) (k47_valued_1 k5_numbers \\
& \quad k1_numbers k1_numbers (k8_funct_2 k5_numbers k1_numbers k1_numbers \\
& \quad (k3_valued_1 k5_numbers k1_numbers k1_numbers X3 X4) (k1_pdiff_2 \\
& \quad np_2\ np_2) (k1_pdiff_3\ np_1\ np_2 X0) X1)) (k8_funct_2 k5_numbers \\
& \quad k1_numbers k1_numbers X4 (k1_pdiff_2\ np_2\ np_2) (k1_pdiff_3\ np_1 \\
& \quad np_2 X0) X1)))) \wedge (k3_pdiff_3 X0 X1 = k2_seq_2 (k20_valued_1 k5_numbers \\
& \quad k1_numbers k1_numbers (k37_valued_1 k5_numbers k1_numbers X3) \\
& \quad (k47_valued_1 k5_numbers k1_numbers k1_numbers (k8_funct_2 k5_numbers \\
& \quad k1_numbers k1_numbers (k3_valued_1 k5_numbers k1_numbers k1_numbers \\
& \quad X3 X4) (k1_pdiff_2\ np_2\ np_2) (k1_pdiff_3\ np_1\ np_2 X0) X1)) (\\
& \quad k8_funct_2 k5_numbers k1_numbers k1_numbers X4 (k1_pdiff_2\ np_2 \\
& \quad np_2) (k1_pdiff_3\ np_1\ np_2 X0) X1))))))))) \wedge \\
& \quad (12)
\end{aligned}$$