

t20_integr14

(TMXPc9gREnRi3FmzKifHmtKs3FriSDTfhgF)

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Let $v1_xboole_0 : \iota \Rightarrow o$ be given. Let $v2_measure5 : \iota \Rightarrow o$ be given. Let $m1_subset_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_zfmisc_1 : \iota \Rightarrow \iota$ be given. Let $k1_numbers : \iota$ be given. Let $v1_funct_1 : \iota \Rightarrow o$ be given. Let $k2_zfmisc_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_rcomp_1 : \iota \Rightarrow o$ be given. Let $r1_tarski : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k10_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_sin_cos : \iota$ be given. Let $k3_taylor_1 : \iota$ be given. Let $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k5_square_1 : \iota \Rightarrow \iota$ be given. Let $k16_sin_cos : \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_fdiff_9 : \iota$ be given. Let $v1_fcont_1 : \iota \Rightarrow o$ be given. Let $k2_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k2_integra5 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k9_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k32_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_seq_4 : \iota \Rightarrow \iota$ be given. Let $k5_seq_4 : \iota \Rightarrow \iota$ be given. Let $r2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k2_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $r1_integra5 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $v1_comseq_2 : \iota \Rightarrow o$ be given. Let $k5_relat_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v3_membered : \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((X0 \in X1) \wedge (m1_subset_1 X1 (k1_zfmisc_1 X2))) \Rightarrow (m1_subset_1 X0 X2) \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v3_rcomp_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\ & ((r1_tarski X0 (k1_relset_1 k1_numbers (k1_partfun1 k1_numbers \\ & k1_numbers k1_numbers k1_numbers k3_taylor_1 k2_fdiff_9))) \Rightarrow \\ & ((r2_fdiff_1 (k32_valued_1 k1_numbers k1_numbers (k1_partfun1 \\ & k1_numbers k1_numbers k1_numbers k1_numbers k3_taylor_1 k2_fdiff_9)) \\ & X0) \wedge (\forall X1. (m1_subset_1 X1 k1_numbers) \Rightarrow ((X1 \in X0) \Rightarrow (k1_seq_1 \\ & (k2_fdiff_1 (k32_valued_1 k1_numbers k1_numbers (k1_partfun1 \\ & k1_numbers k1_numbers k1_numbers k1_numbers k3_taylor_1 k2_fdiff_9)) \\ & X0) X1 = k10_real_1 (k1_seq_1 k19_sin_cos (k1_seq_1 k3_taylor_1 \\ & X1)) (k8_real_1 X1 (k5_square_1 (k1_seq_1 k16_sin_cos (k1_seq_1 \\ & k3_taylor_1 X1)))))))))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\ & \quad X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1. \forall X2. ((v1_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (((r1_tarski X0 X1) \wedge (r2_fdiff_1 X2 X1) \wedge (r1_integra5 X0 (k2_fdiff_1 \\ & \quad X2 X1)) \wedge (v1_comseq_2 (k2_partfun1 k1_numbers k1_numbers (k2_fdiff_1 \\ & \quad X2 X1) X0)))) \Rightarrow (k2_integra5 X0 (k2_fdiff_1 X2 X1) = k9_real_1 (k1_seq_1 \\ & \quad X2 (k4_seq_4 X0) (k1_seq_1 X2 (k5_seq_4 X0)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\ & \quad X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (((r1_tarski X0 (k1_relset_1 k1_numbers X1)) \wedge (v1_fcont_1 (k2_partfun1 \\ & \quad k1_numbers k1_numbers X1 X0))) \Rightarrow (r1_integra5 X0 X1))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\ & \quad X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (((r1_tarski X0 (k1_relset_1 k1_numbers X1)) \wedge (v1_fcont_1 (k2_partfun1 \\ & \quad k1_numbers k1_numbers X1 X0))) \Rightarrow (v1_comseq_2 (k2_partfun1 k1_numbers \\ & \quad k1_numbers X1 X0)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((v1_funct_1 X2) \wedge \\ & (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow (k2_partfun1 \\ & \quad X0 X1 X2 X3 = k5_relat_1 X2 X3) \end{aligned} \quad (6)$$

Assume the following.

$$v3_membered k1_numbers \quad (7)$$

Assume the following.

$$(v1_funct_1 k3_taylor_1) \wedge (m1_subset_1 k3_taylor_1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers))) \quad (8)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v3_membered X1) \wedge ((v1_funct_1 \\ & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 X0 X1)))) \Rightarrow ((v1_funct_1 \\ & (k32_valued_1 X0 X1 X2)) \wedge (m1_subset_1 (k32_valued_1 X0 X1 X2) (\\ & \quad k1_zfmisc_1 (k2_zfmisc_1 X0 k1_numbers)))) \end{aligned} \quad (9)$$

Assume the following.

$$(v1_funct_1\ k2_fdiff_9) \wedge (m1_subset_1\ k2_fdiff_9\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers))) \quad (10)$$

Assume the following.

$$\forall X0.\forall X1.((v1_funct_1\ X0) \wedge (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \Rightarrow ((v1_funct_1\ (k2_fdiff_1\ X0\ X1)) \wedge (m1_subset_1\ (k2_fdiff_1\ X0\ X1)\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.\forall X3.\forall X4.\forall X5.(((v1_funct_1\ X4) \wedge (m1_subset_1\ X4\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X1)))) \wedge ((v1_funct_1\ X5) \wedge (m1_subset_1\ X5\ (k1_zfmisc_1\ (k2_zfmisc_1\ X2\ X3)))))) \Rightarrow ((v1_funct_1\ (k1_partfun1\ X0\ X1\ X2\ X3\ X4\ X5)) \wedge (m1_subset_1\ (k1_partfun1\ X0\ X1\ X2\ X3\ X4\ X5)\ (k1_zfmisc_1\ (k2_zfmisc_1\ X0\ X3)))) \quad (12)$$

Assume the following.

$$\forall X0.((v1_funct_1\ X0) \wedge (m1_subset_1\ X0\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \Rightarrow (\forall X1.(r2_fdiff_1\ X0\ X1) \Rightarrow (\forall X2.((v1_funct_1\ X2) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \Rightarrow ((X2 = k2_fdiff_1\ X0\ X1) \Leftrightarrow ((k1_relset_1\ k1_numbers\ X2 = X1) \wedge (\forall X3.(m1_subset_1\ X3\ k1_numbers) \Rightarrow ((X3 \in X1) \Rightarrow (k1_seq_1\ X2\ X3 = k1_fdiff_1\ X0\ X3))))))) \quad (13)$$

Theorem 1

$$\forall X0.((\neg v1_xboole_0\ X0) \wedge ((v2_measure5\ X0) \wedge (m1_subset_1\ X0\ (k1_zfmisc_1\ k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1\ X1) \wedge (m1_subset_1\ X1\ (k1_zfmisc_1\ (k2_zfmisc_1\ k1_numbers\ k1_numbers)))) \Rightarrow (\forall X2.((v3_rcomp_1\ X2) \wedge (m1_subset_1\ X2\ (k1_zfmisc_1\ k1_numbers)))) \Rightarrow (((r1_tarski\ X0\ X2) \wedge ((\forall X3.(m1_subset_1\ X3\ k1_numbers) \Rightarrow ((X3 \in X2) \Rightarrow (k1_seq_1\ X1\ X3 = k10_real_1\ (k1_seq_1\ k19_sin_cos\ (k1_seq_1\ k3_taylor_1\ X3))\ (k8_real_1\ X3\ (k5_square_1\ (k1_seq_1\ k16_sin_cos\ (k1_seq_1\ k3_taylor_1\ X3)))))) \wedge ((r1_tarski\ X2\ (k1_relset_1\ k1_numbers\ (k1_partfun1\ k1_numbers\ k1_numbers\ k1_numbers\ k1_numbers\ k3_taylor_1\ k2_fdiff_9)))) \wedge ((X2 = k1_relset_1\ k1_numbers\ X1) \wedge (v1_fcont_1\ (k2_partfun1\ k1_numbers\ k1_numbers\ X1\ X0)))))) \Rightarrow (k2_integra5\ X0\ X1 = k9_real_1\ (k1_seq_1\ (k32_valued_1\ k1_numbers\ k1_numbers\ (k1_partfun1\ k1_numbers\ k1_numbers\ k1_numbers\ k1_numbers\ k3_taylor_1\ k2_fdiff_9))\ (k4_seq_4\ X0))\ (k1_seq_1\ (k32_valued_1\ k1_numbers\ k1_numbers\ (k1_partfun1\ k1_numbers\ k1_numbers\ k1_numbers\ k1_numbers\ k1_numbers\ k3_taylor_1\ k2_fdiff_9))\ (k5_seq_4\ X0))))))$$