

t54_integr14

(TMQFY7aQodXbA9cAwnuTYx9D9QWY4G63VUE)

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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 $k8_real_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_sin_cos : \iota$ be given. Let $k16_sin_cos : \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $v1_funct_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1_fdiff_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Assume the following.

$$\begin{aligned}
 & \forall X0.((v3_rcomp_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\
 & ((r2_fdiff_1 (k1_partfun1 k1_numbers k1_numbers k1_numbers k1_numbers \\
 & \quad k16_sin_cos k16_sin_cos) X0) \wedge (\forall X1.(m1_subset_1 X1 k1_numbers) \Rightarrow \\
 & ((X1 \in X0) \Rightarrow (k1_seq_1 (k2_fdiff_1 (k1_partfun1 k1_numbers k1_numbers \\
 & \quad k1_numbers k1_numbers k16_sin_cos k16_sin_cos) X0) X1 = k8_real_1 \\
 & \quad (k1_seq_1 k19_sin_cos (k1_seq_1 k16_sin_cos X1)) (k1_seq_1 k19_sin_cos \\
 & \quad \quad X1))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\
 & \quad X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1. \forall X2. ((v1_funct_1 \\
 & X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\
 & (((r1_tarski X0 X1) \wedge ((r2_fdiff_1 X2 X1) \wedge ((r1_integra5 X0 (k2_fdiff_1 \\
 & \quad X2 X1)) \wedge (v1_comseq_2 (k2_partfun1 k1_numbers k1_numbers (k2_fdiff_1 \\
 & \quad X2 X1) X0)))) \Rightarrow (k2_integra5 X0 (k2_fdiff_1 X2 X1) = k9_real_1 (k1_seq_1 \\
 & \quad X2 (k4_seq_4 X0)) (k1_seq_1 X2 (k5_seq_4 X0))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\ & X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (((r1_tarSKI X0 (k1_relset_1 k1_numbers X1)) \wedge (v1_fcont_1 (k2_partfun1 \\ & k1_numbers k1_numbers X1 X0))) \Rightarrow (r1_integra5 X0 X1))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\ & X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (((r1_tarSKI X0 (k1_relset_1 k1_numbers X1)) \wedge (v1_fcont_1 (k2_partfun1 \\ & k1_numbers k1_numbers X1 X0))) \Rightarrow (v1_comseq_2 (k2_partfun1 k1_numbers \\ & k1_numbers X1 X0)))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 \\ & (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow ((v1_funct_1 (k2_fdiff_1 \\ & X0 X1)) \wedge (m1_subset_1 (k2_fdiff_1 X0 X1) (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers)))) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. \forall X4. \forall X5. \\ & (((v1_funct_1 X4) \wedge (m1_subset_1 X4 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X0 X1)))) \wedge ((v1_funct_1 X5) \wedge (m1_subset_1 X5 (k1_zfmisc_1 (k2_zfmisc_1 \\ & X2 X3)))) \Rightarrow ((v1_funct_1 (k1_partfun1 X0 X1 X2 X3 X4 X5)) \wedge (m1_subset_1 \\ & (k1_partfun1 X0 X1 X2 X3 X4 X5) (k1_zfmisc_1 (k2_zfmisc_1 X0 X3)))) \end{aligned} \quad (6)$$

Assume the following.

$$\begin{aligned} & (v1_funct_1 k16_sin_cos) \wedge ((v1_funct_2 k16_sin_cos k1_numbers \\ & k1_numbers) \wedge (m1_subset_1 k16_sin_cos (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers)))) \end{aligned} \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1_funct_1 X0) \wedge (m1_subset_1 X0 (k1_zfmisc_1 (k2_zfmisc_1 \\ & k1_numbers k1_numbers)))) \Rightarrow (\forall X1. (r2_fdiff_1 X0 X1) \Rightarrow (\forall X2. \\ & ((v1_funct_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers \\ & k1_numbers)))) \Rightarrow ((X2 = k2_fdiff_1 X0 X1) \Leftrightarrow ((k1_relset_1 k1_numbers \\ & X2 = X1) \wedge (\forall X3. (m1_subset_1 X3 k1_numbers) \Rightarrow ((X3 \in X1) \Rightarrow (k1_seq_1 \\ & X2 X3 = k1_fdiff_1 X0 X3)))))) \end{aligned} \quad (8)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\ & \quad X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (\forall X2.((v3_rcomp_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 k1_numbers))) \Rightarrow \\ & \quad ((r1_tarski X0 X2) \wedge ((\forall X3.(m1_subset_1 X3 k1_numbers) \Rightarrow \\ & ((X3 \in X2) \Rightarrow (k1_seq_1 X1 X3 = k8_real_1 (k1_seq_1 k19_sin_cos (k1_seq_1 \\ & \quad k16_sin_cos X3)) (k1_seq_1 k19_sin_cos X3)))) \wedge ((X2 = k1_relset_1 \\ & \quad k1_numbers X1) \wedge (v1_fcont_1 (k2_partfun1 k1_numbers k1_numbers \\ & \quad X1 X0)))))) \Rightarrow (k2_integra5 X0 X1 = k9_real_1 (k1_seq_1 (k1_partfun1 \\ & \quad k1_numbers k1_numbers k1_numbers k1_numbers k16_sin_cos k16_sin_cos) \\ & \quad (k4_seq_4 X0)) (k1_seq_1 (k1_partfun1 k1_numbers k1_numbers k1_numbers \\ & \quad k1_numbers k16_sin_cos k16_sin_cos) (k5_seq_4 X0)))))) \end{aligned}$$