

t17_integr13

(TMaWJT4G5RcJJhH6npVKYzRwcDJXEGLFEAg)

October 27, 2020

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 $r2_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k3_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_rfunct_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k29_sin_cos : \iota$ be given. Let $k1_partfun2 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k3_taylor_1 : \iota$ be given. Let $k41_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k19_sin_cos : \iota$ be given. Let $k1_relset_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k20_valued_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ 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 $k1_seq_1 : \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $k4_seq_4 : \iota \Rightarrow \iota$ be given. Let $k5_seq_4 : \iota \Rightarrow \iota$ be given. Let $k16_sin_cos : \iota$ be given. Assume the following.

$$\begin{aligned}
& \forall X0. ((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\
& \quad X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1. ((v1_funct_1 X1) \wedge \\
& (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\
& (\forall X2. ((v3_rcomp_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 k1_numbers)))) \Rightarrow \\
& (((r1_tarski X0 X2) \wedge ((r2_relset_1 k1_numbers k1_numbers X1 (k3_valued_1 \\
& k1_numbers k1_numbers k1_numbers (k3_rfunct_1 k1_numbers k1_numbers \\
& (k3_rfunct_1 k1_numbers k1_numbers k16_sin_cos k19_sin_cos) \\
& (k1_partfun2 k1_numbers X2)) (k3_rfunct_1 k1_numbers k1_numbers \\
& k3_taylor_1 (k41_valued_1 k1_numbers k1_numbers k19_sin_cos)))) \wedge \\
& ((r1_tarski X2 (k1_relset_1 k1_numbers (k20_valued_1 k1_numbers \\
& k1_numbers k1_numbers k3_taylor_1 k29_sin_cos))) \wedge ((X2 = k1_relset_1 \\
& k1_numbers X1) \wedge (v1_fcont_1 (k2_partfun1 k1_numbers k1_numbers \\
& X1 X0)))))) \Rightarrow (k2_integra5 X0 X1 = k9_real_1 (k1_seq_1 (k20_valued_1 \\
& k1_numbers k1_numbers k1_numbers k3_taylor_1 k29_sin_cos) (k4_seq_4 \\
& X0)) (k1_seq_1 (k20_valued_1 k1_numbers k1_numbers k1_numbers \\
& k3_taylor_1 k29_sin_cos) (k5_seq_4 X0))))))
\end{aligned} \tag{1}$$

Assume the following.

$$k29_sin_cos = k3_rfunct_1 k1_numbers k1_numbers k16_sin_cos k19_sin_cos \quad (2)$$

Theorem 1

$$\begin{aligned} & \forall X0.((\neg v1_xboole_0 X0) \wedge ((v2_measure5 X0) \wedge (m1_subset_1 \\ & \quad X0 (k1_zfmisc_1 k1_numbers)))) \Rightarrow (\forall X1.((v1_funct_1 X1) \wedge \\ & (m1_subset_1 X1 (k1_zfmisc_1 (k2_zfmisc_1 k1_numbers k1_numbers)))) \Rightarrow \\ & (\forall X2.((v3_rcomp_1 X2) \wedge (m1_subset_1 X2 (k1_zfmisc_1 k1_numbers)))) \Rightarrow \\ & (((r1_tarski X0 X2) \wedge ((r2_relset_1 k1_numbers k1_numbers X1 (k3_valued_1 \\ & \quad k1_numbers k1_numbers k1_numbers (k3_rfunct_1 k1_numbers k1_numbers \\ & \quad k29_sin_cos (k1_partfun2 k1_numbers X2)) (k3_rfunct_1 k1_numbers \\ & \quad k1_numbers k3_taylor_1 (k41_valued_1 k1_numbers k1_numbers k19_sin_cos)))))) \wedge \\ & ((r1_tarski X2 (k1_relset_1 k1_numbers (k20_valued_1 k1_numbers \\ & \quad k1_numbers k1_numbers k3_taylor_1 k29_sin_cos))) \wedge ((r1_tarski \\ & \quad X2 (k1_relset_1 k1_numbers k29_sin_cos)) \wedge ((X2 = k1_relset_1 k1_numbers \\ & \quad X1) \wedge (v1_fcont_1 (k2_partfun1 k1_numbers k1_numbers X1 X0)))))) \Rightarrow \\ & (k2_integra5 X0 X1 = k9_real_1 (k1_seq_1 (k20_valued_1 k1_numbers \\ & \quad k1_numbers k1_numbers k3_taylor_1 k29_sin_cos) (k4_seq_4 X0)) \\ & (k1_seq_1 (k20_valued_1 k1_numbers k1_numbers k1_numbers k3_taylor_1 \\ & \quad k29_sin_cos) (k5_seq_4 X0)))))) \end{aligned}$$