

t43\_integr12 (TMMaR-  
bzmjtBw8BPfLZGw1V7Mv3TrutLDj5J)

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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  $r2\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_rfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_rfunct\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_sin\_cos9 : \iota$  be given. Let  $k2\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_binop\_2 : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_taylor\_1 : \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k12\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k11\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_square\_1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_intgra5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_binop\_2 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k32\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_taylor\_1 : \iota$  be given. Let  $k4\_seq\_4 : \iota \Rightarrow \iota$  be given. Let

$k5\_seq\_4 : \iota \Rightarrow \iota$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\
& \quad X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\
& (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow \\
& (\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers k1\_numbers)))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 \\
& \quad X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow (\forall X4. \\
& ((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\
& \quad k1\_numbers)))) \Rightarrow (\forall X5.((v3\_rcomp\_1 X5) \wedge (m1\_subset\_1 X5 \\
& \quad (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow (((r1\_tarski X0 X5) \wedge ((r2\_relset\_1 \\
& \quad k1\_numbers k1\_numbers X1 (k3\_rfunct\_1 k1\_numbers k1\_numbers ( \\
& \quad k6\_rfunct\_1 k1\_numbers k1\_numbers (k3\_valued\_1 k1\_numbers k1\_numbers \\
& \quad k1\_numbers X2 X3)) X4) \wedge ((r2\_relset\_1 k1\_numbers k1\_numbers X4 \\
& \quad k2\_sin\_cos9) \wedge ((r1\_tarski X5 (k2\_rcomp\_1 (k19\_binop\_2 np\_1) \\
& \quad np\_1)) \wedge ((r2\_relset\_1 k1\_numbers k1\_numbers X3 (k1\_taylor\_1 \\
& \quad np\_2)) \wedge ((\forall X6.(m1\_subset\_1 X6 k1\_numbers) \Rightarrow ((X6 \in X5) \Rightarrow \\
& ((k1\_seq\_1 X2 X6 = np\_1) \wedge (\neg r1\_xxreal\_0 (k1\_seq\_1 X4 X6) k6\_numbers)))) \wedge \\
& (X5 = k1\_relset\_1 k1\_numbers X1)))))) \Rightarrow (k2\_integra5 X0 X1 = k10\_binop\_2 \\
& (k1\_seq\_1 (k32\_valued\_1 k1\_numbers k1\_numbers (k1\_partfun1 k1\_numbers \\
& \quad k1\_numbers k1\_numbers k1\_numbers k2\_sin\_cos9 k3\_taylor\_1)) ( \\
& \quad k4\_seq\_4 X0)) (k1\_seq\_1 (k32\_valued\_1 k1\_numbers k1\_numbers ( \\
& \quad k1\_partfun1 k1\_numbers k1\_numbers k1\_numbers k1\_numbers k2\_sin\_cos9 \\
& \quad k3\_taylor\_1)) (k5\_seq\_4 X0)))))))))
\end{aligned} \tag{1}$$

**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.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers k1\_numbers)))) \Rightarrow (\forall X3.((v1\_funct\_1 X3) \wedge (m1\_subset\_1 \\
& \quad X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow (\forall X4. \\
& ((v1\_funct\_1 X4) \wedge (m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\
& \quad k1\_numbers)))) \Rightarrow (\forall X5.((v3\_rcomp\_1 X5) \wedge (m1\_subset\_1 X5 \\
& \quad (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow ((r1\_tarski X0 X5) \wedge ((r2\_relset\_1 \\
& \quad k1\_numbers k1\_numbers X1 (k3\_rfunct\_1 k1\_numbers k1\_numbers ( \\
& \quad k6\_rfunct\_1 k1\_numbers k1\_numbers (k3\_valued\_1 k1\_numbers k1\_numbers \\
& \quad k1\_numbers X2 X3)) X4) \wedge ((r2\_relset\_1 k1\_numbers k1\_numbers X4 \\
& \quad k2\_sin\_cos9) \wedge ((r1\_tarski X5 (k2\_rcomp\_1 (k19\_binop\_2 np\_1) \\
& \quad np\_1)) \wedge ((r2\_relset\_1 k1\_numbers k1\_numbers X3 (k1\_taylor\_1 \\
& \quad np\_2)) \wedge ((\forall X6.(m1\_subset\_1 X6 k1\_numbers) \Rightarrow ((X6 \in X5) \Rightarrow \\
& ((k1\_seq\_1 X1 X6 = k12\_binop\_2 np\_1 (k11\_binop\_2 (k9\_binop\_2 np\_1 \\
& \quad (k5\_square\_1 X6)) (k1\_seq\_1 k2\_sin\_cos9 X6))) \wedge ((k1\_seq\_1 X2 X6 = \\
& np\_1) \wedge (\neg r1\_xxreal\_0 (k1\_seq\_1 X4 X6) k6\_numbers)))))) \wedge (X5 = k1\_relset\_1 \\
& \quad k1\_numbers X1)))))) \Rightarrow (k2\_integra5 X0 X1 = k10\_binop\_2 (k1\_seq\_1 \\
& \quad (k32\_valued\_1 k1\_numbers k1\_numbers (k1\_partfun1 k1\_numbers \\
& \quad k1\_numbers k1\_numbers k1\_numbers k2\_sin\_cos9 k3\_taylor\_1)) ( \\
& \quad k4\_seq\_4 X0)) (k1\_seq\_1 (k32\_valued\_1 k1\_numbers k1\_numbers ( \\
& \quad k1\_partfun1 k1\_numbers k1\_numbers k1\_numbers k1\_numbers k2\_sin\_cos9 \\
& \quad k3\_taylor\_1)) (k5\_seq\_4 X0)))))))))
\end{aligned}$$