

## t53\_integra8

(TMPytnNE8ahFPftRYoDYh5ZWnNnA88Y1NDR)

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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  $k2\_integra5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k24\_sin\_cos : \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $k5\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_integra5 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_comseq\_2 : \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v3\_valued\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $v1\_int\_1 : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\forall X0.(v1\_xreal\_0 X0) \Rightarrow ((r2\_fdiff\_1 k24\_sin\_cos k1\_numbers) \wedge (k1\_fdiff\_1 k24\_sin\_cos X0 = k1\_seq\_1 k24\_sin\_cos X0)) \quad (1)$$

Assume the following.

$$k1\_relset\_1 k1\_numbers k24\_sin\_cos = k1\_numbers \quad (2)$$

Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarski X0 X1) \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.\forall X2.((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow \\ & (((r1\_tarski X0 X1) \wedge ((r2\_fdiff\_1 X2 X1) \wedge ((r1\_integra5 X0 (k2\_fdiff\_1 X2 X1)) \wedge (v1\_comseq\_2 (k2\_partfun1 k1\_numbers k1\_numbers (k2\_fdiff\_1 X2 X1) X0)))) \Rightarrow (k2\_integra5 X0 (k2\_fdiff\_1 X2 X1) = k9\_real\_1 (k1\_seq\_1 X2 (k4\_seq\_4 X0)) (k1\_seq\_1 X2 (k5\_seq\_4 X0)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.\forall X3.((\neg v1\_xboole\_0 X0)\wedge \\ & (((v1\_funct\_1 X2)\wedge((v1\_funct\_2 X2 X0 X1)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 X0 X1))))))\wedge(m1\_subset\_1 X3 X0)))\Rightarrow(k3\_funct\_2 X0 \\ & X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \quad (5)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X0)\wedge((v1\_funct\_1 X0)\wedge(v3\_valued\_0 X0)))\Rightarrow(k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \quad (6)$$

Assume the following.

$$\exists X0.(m1\_subset\_1 X0 k1\_numbers)\wedge((v1\_xxreal\_0 X0)\wedge((v1\_xcmplx\_0 X0)\wedge((v1\_xreal\_0 X0)\wedge(v1\_int\_1 X0)))) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0)\wedge((v2\_measure5 X0)\wedge(m1\_subset\_1 \\ & X0 (k1\_zfmisc\_1 k1\_numbers))))\Rightarrow((r1\_integra5 X0 k24\_sin\_cos)\wedge \\ & (v1\_comseq\_2 (k2\_partfun1 k1\_numbers k1\_numbers k24\_sin\_cos \\ & X0))) \end{aligned} \quad (8)$$

Assume the following.

$$v3\_membered k1\_numbers \quad (9)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (10)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))\Rightarrow(m1\_subset\_1 (k5\_seq\_4 X0) k1\_numbers) \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))\Rightarrow(m1\_subset\_1 (k4\_seq\_4 X0) k1\_numbers) \quad (12)$$

Assume the following.

$$\begin{aligned} & (v1\_funct\_1 k24\_sin\_cos)\wedge((v1\_funct\_2 k24\_sin\_cos k1\_numbers \\ & k1\_numbers)\wedge(m1\_subset\_1 k24\_sin\_cos (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k1\_numbers k1\_numbers)))) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0.((v1\_funct\_1 X0)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k1\_numbers k1\_numbers))))\Rightarrow(\forall X1.(r2\_fdiff\_1 X0 X1)\Rightarrow(\forall X2. \\ & ((v1\_funct\_1 X2)\wedge(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\ & k1\_numbers))))\Rightarrow((X2 = k2\_fdiff\_1 X0 X1)\Leftrightarrow((k1\_relset\_1 k1\_numbers \\ & X2 = X1)\wedge(\forall X3.(m1\_subset\_1 X3 k1\_numbers)\Rightarrow((X3 \in X1)\Rightarrow(k1\_seq\_1 \\ & X2 X3 = k1\_fdiff\_1 X0 X3)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k1\_numbers)\Rightarrow(v1\_xreal\_0 X0) \quad (15)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v1\_relat\_1 X2) \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered X1)\Rightarrow(\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1)))\Rightarrow(v3\_valued\_0 X2)) \quad (17)$$

**Theorem 1**

$$\forall X0.((\neg v1\_xboole\_0 X0)\wedge((v2\_measure5 X0)\wedge(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))))\Rightarrow(k2\_integra5 X0 k24\_sin\_cos = k9\_real\_1 (k3\_funct\_2 k1\_numbers k1\_numbers k24\_sin\_cos (k4\_seq\_4 X0)) (k3\_funct\_2 k1\_numbers k1\_numbers k24\_sin\_cos (k5\_seq\_4 X0)))$$