

t76\_integra8  
(TMUQYLrRijPp2xtQADnk5zfc0zZTPNvSy82)

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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  $k3\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_sin\_cos2 : \iota$  be given. Let  $k4\_sin\_cos2 : \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $k5\_seq\_4 : \iota \Rightarrow \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v3\_rcomp\_1 : \iota \Rightarrow o$  be given. Let  $r2\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  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  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_fdiff\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_fcont\_1 : \iota \Rightarrow o$  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  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_xtuple\_0 : \iota \Rightarrow \iota$  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. Let  $k2\_subset\_1 : \iota \Rightarrow \iota$  be given.

Let  $v5\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 \\
& \quad X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow (\forall X2. \\
& ((-v1\_xboole\_0 X2) \wedge ((v2\_measure5 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
& \quad k1\_numbers)))) \Rightarrow (\forall X3.((v3\_rcomp\_1 X3) \wedge (m1\_subset\_1 X3 \\
& \quad (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow (((r2\_fdiff\_1 X0 X3) \wedge ((r2\_fdiff\_1 \\
& \quad X1 X3) \wedge ((r1\_tarSKI X2 X3) \wedge ((r1\_intgra5 X2 (k2\_fdiff\_1 X0 X3)) \wedge \\
& \quad ((v1\_comseq\_2 (k2\_partfun1 k1\_numbers k1\_numbers (k2\_fdiff\_1 \\
& \quad X0 X3) X2)) \wedge ((r1\_intgra5 X2 (k2\_fdiff\_1 X1 X3)) \wedge (v1\_comseq\_2 \\
& \quad (k2\_partfun1 k1\_numbers k1\_numbers (k2\_fdiff\_1 X1 X3) X2)))))) \Rightarrow \\
& \quad (k2\_intgra5 X2 (k3\_valued\_1 k1\_numbers k1\_numbers k1\_numbers \\
& \quad (k2\_fdiff\_1 X0 X3) (k2\_fdiff\_1 X1 X3)) = k9\_real\_1 (k7\_real\_1 (k9\_real\_1 \\
& \quad (k1\_seq\_1 X0 (k4\_seq\_4 X2)) (k1\_seq\_1 X0 (k5\_seq\_4 X2))) (k1\_seq\_1 \\
& \quad X1 (k4\_seq\_4 X2)) (k1\_seq\_1 X1 (k5\_seq\_4 X2))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\forall X0. \forall X1. (m1\_subset\_1 X0 (k1\_zfmisc\_1 X1)) \Leftrightarrow (r1\_tarSKI X0 X1) \tag{2}$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow ((r2\_fdiff\_1 k4\_sin\_cos2 k1\_numbers) \wedge (k1\_fdiff\_1 k4\_sin\_cos2 X0 = k1\_seq\_1 k1\_sin\_cos2 X0)) \tag{3}$$

Assume the following.

$$\forall X0. (v1\_xreal\_0 X0) \Rightarrow ((r2\_fdiff\_1 k1\_sin\_cos2 k1\_numbers) \wedge (k1\_fdiff\_1 k1\_sin\_cos2 X0 = k1\_seq\_1 k4\_sin\_cos2 X0)) \tag{4}$$

Assume the following.

$$k2\_fdiff\_1 k4\_sin\_cos2 k1\_numbers = k1\_sin\_cos2 \tag{5}$$

Assume the following.

$$k2\_fdiff\_1 k1\_sin\_cos2 k1\_numbers = k4\_sin\_cos2 \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(((-v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\
& \quad X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\
& \quad (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow \\
& \quad (((r1\_tarSKI X0 (k1\_relset\_1 k1\_numbers X1)) \wedge (v1\_fcont\_1 (k2\_partfun1 \\
& \quad k1\_numbers k1\_numbers X1 X0))) \Rightarrow (r1\_intgra5 X0 X1)))
\end{aligned} \tag{7}$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\ & \quad X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.((v1\_funct\_1 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \Rightarrow \\ & (((r1\_tarski X0 (k1\_relset\_1 k1\_numbers X1)) \wedge (v1\_fcont\_1 (k2\_partfun1 \\ & \quad k1\_numbers k1\_numbers X1 X0))) \Rightarrow (v1\_comseq\_2 (k2\_partfun1 k1\_numbers \\ & \quad k1\_numbers X1 X0)))) \end{aligned} \tag{8}$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 X0) \wedge \\ & (((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 X0 X1) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\ & \quad (k2\_zfmisc\_1 X0 X1)))))) \wedge (m1\_subset\_1 X3 X0))) \Rightarrow (k3\_funct\_2 X0 \\ & \quad X1 X2 X3 = k1\_funct\_1 X2 X3) \end{aligned} \tag{9}$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v3\_valued\_0 X0))) \Rightarrow (k1\_seq\_1 X0 X1 = k1\_funct\_1 X0 X1) \tag{10}$$

Assume the following.

$$\forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge (v4\_relat\_1 X1 X0)) \Rightarrow (k1\_relset\_1 X0 X1 = k9\_xtuple\_0 X1) \tag{11}$$

Assume the following.

$$\exists X0. (m1\_subset\_1 X0 k1\_numbers) \wedge ((v1\_xreal\_0 X0) \wedge ((v1\_xcmplx\_0 X0) \wedge ((v1\_xreal\_0 X0) \wedge (v1\_int\_1 X0)))) \tag{12}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\ & \quad X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (v1\_fcont\_1 (k2\_partfun1 k1\_numbers \\ & \quad k1\_numbers k4\_sin\_cos2 X0)) \end{aligned} \tag{13}$$

Assume the following.

$$\begin{aligned} & \forall X0. ((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\ & \quad X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (v1\_fcont\_1 (k2\_partfun1 k1\_numbers \\ & \quad k1\_numbers k1\_sin\_cos2 X0)) \end{aligned} \tag{14}$$

Assume the following.

$$k9\_xtuple\_0 k4\_sin\_cos2 = k1\_numbers \tag{15}$$

Assume the following.

$$k9\_xtuple\_0 k1\_sin\_cos2 = k1\_numbers \tag{16}$$

Assume the following.

$$v3\_membered\ k1\_numbers \quad (17)$$

Assume the following.

$$v3\_rcomp\_1\ (k2\_subset\_1\ k1\_numbers) \quad (18)$$

Assume the following.

$$\neg v1\_xboole\_0\ k1\_numbers \quad (19)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers)) \Rightarrow (m1\_subset\_1\ (k5\_seq\_4\ X0)\ k1\_numbers) \quad (20)$$

Assume the following.

$$(v1\_funct\_1\ k4\_sin\_cos2) \wedge ((v1\_funct\_2\ k4\_sin\_cos2\ k1\_numbers\ k1\_numbers) \wedge (m1\_subset\_1\ k4\_sin\_cos2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \quad (21)$$

Assume the following.

$$\forall X0.(m1\_subset\_1\ X0\ (k1\_zfmisc\_1\ k1\_numbers)) \Rightarrow (m1\_subset\_1\ (k4\_seq\_4\ X0)\ k1\_numbers) \quad (22)$$

Assume the following.

$$\forall X0.m1\_subset\_1\ (k2\_subset\_1\ X0)\ (k1\_zfmisc\_1\ X0) \quad (23)$$

Assume the following.

$$(v1\_funct\_1\ k1\_sin\_cos2) \wedge ((v1\_funct\_2\ k1\_sin\_cos2\ k1\_numbers\ k1\_numbers) \wedge (m1\_subset\_1\ k1\_sin\_cos2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ k1\_numbers\ k1\_numbers)))) \quad (24)$$

Assume the following.

$$\forall X0.k2\_subset\_1\ X0 = X0 \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))) \Rightarrow ((v4\_relat\_1\ X2\ X0) \wedge (v5\_relat\_1\ X2\ X1)) \quad (26)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))) \Rightarrow (v1\_relat\_1\ X2) \quad (27)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered\ X1) \Rightarrow (\forall X2.(m1\_subset\_1\ X2\ (k1\_zfmisc\_1\ (k2\_zfmisc\_1\ X0\ X1))) \Rightarrow (v3\_valued\_0\ X2)) \quad (28)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\ & X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (k2\_integra5 X0 (k3\_valued\_1 \\ k1\_numbers k1\_numbers k1\_numbers k1\_sin\_cos2 k4\_sin\_cos2) = k9\_real\_1 \\ & (k7\_real\_1 (k9\_real\_1 (k3\_funct\_2 k1\_numbers k1\_numbers k4\_sin\_cos2 \\ & (k4\_seq\_4 X0)) (k3\_funct\_2 k1\_numbers k1\_numbers k4\_sin\_cos2 \\ & (k5\_seq\_4 X0))) (k3\_funct\_2 k1\_numbers k1\_numbers k1\_sin\_cos2 \\ & (k4\_seq\_4 X0))) (k3\_funct\_2 k1\_numbers k1\_numbers k1\_sin\_cos2 \\ & (k5\_seq\_4 X0))) \end{aligned}$$