

t88\_integra8  
(TMN3TK9E7obYTNShNGSNjum23dQYprzdQ33)

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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  $k26\_valued\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k4\_sin\_cos2 : \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_sin\_cos2 : \iota$  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  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  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  $v1\_xxreal\_0 : \iota \Rightarrow o$  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. Assume the following.

$$\begin{aligned}
& \forall X0.((v1\_funct\_1 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\
& \quad k1\_numbers k1\_numbers)))) \Rightarrow (\forall X1.((\neg v1\_xboole\_0 X1) \wedge ( \\
& \quad (v2\_measure5 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow \\
& \quad (\forall X2.(m1\_subset\_1 X2 k1\_numbers) \Rightarrow (\forall X3.((v3\_rcomp\_1 \\
& \quad X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow (((r2\_fdiff\_1 \\
& \quad X0 X3) \wedge ((r1\_tarski X1 X3) \wedge ((r1\_integra5 X1 (k2\_fdiff\_1 X0 X3)) \wedge \\
& \quad (v1\_comseq\_2 (k2\_partfun1 k1\_numbers k1\_numbers (k2\_fdiff\_1 \\
& \quad X0 X3) X1)))) \Rightarrow (k2\_integra5 X1 (k26\_valued\_1 k1\_numbers k1\_numbers \\
& \quad (k2\_fdiff\_1 X0 X3) X2) = k9\_real\_1 (k8\_real\_1 X2 (k1\_seq\_1 X0 (k4\_seq\_4 \\
& \quad X1))) (k8\_real\_1 X2 (k1\_seq\_1 X0 (k5\_seq\_4 X1)))))))))
\end{aligned} \tag{1}$$

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.

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

Assume the following.

$$k2\_fdiff\_1 k1\_sin\_cos2 k1\_numbers = k4\_sin\_cos2 \quad (4)$$

Assume the following.

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

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.

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow ((r1\_intgra5 X0 k4\_sin\_cos2) \wedge (v1\_comseq\_2 (k2\_partfun1 k1\_numbers k1\_numbers k4\_sin\_cos2 X0))) \quad (8)$$

Assume the following.

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

Assume the following.

$$v3\_rcomp\_1 (k2\_subset\_1 k1\_numbers) \quad (10)$$

Assume the following.

$$\neg v1\_xboole\_0 k1\_numbers \quad (11)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow (m1\_subset\_1 (k5\_seq\_4 X0) k1\_numbers) \quad (12)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)) \Rightarrow (m1\_subset\_1 (k4\_seq\_4 X0) k1\_numbers) \quad (13)$$

Assume the following.

$$\forall X0.m1\_subset\_1 (k2\_subset\_1 X0) (k1\_zfmisc\_1 X0) \quad (14)$$

Assume the following.

$$(v1\_funct\_1 k1\_sin\_cos2) \wedge ((v1\_funct\_2 k1\_sin\_cos2 k1\_numbers k1\_numbers) \wedge (m1\_subset\_1 k1\_sin\_cos2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers k1\_numbers)))) \quad (15)$$

Assume the following.

$$\forall X0.k2\_subset\_1 X0 = X0 \quad (16)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v1\_relat\_1 X2) \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered X1) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 X0 X1))) \Rightarrow (v3\_valued\_0 X2)) \quad (18)$$

**Theorem 1**

$$\forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 k1\_numbers) \Rightarrow (k2\_integra5 X0 (k26\_valued\_1 k1\_numbers k1\_numbers k4\_sin\_cos2 X1) = k9\_real\_1 (k8\_real\_1 X1 (k3\_funct\_2 k1\_numbers k1\_numbers k1\_sin\_cos2 (k4\_seq\_4 X0))) (k8\_real\_1 X1 (k3\_funct\_2 k1\_numbers k1\_numbers k1\_sin\_cos2 (k5\_seq\_4 X0))))))$$