

# t43\_integra8

(TMQzPNCtbiGkmAEZsZjn7NtPrWk71xPwni7)

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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  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k8\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k32\_sin\_cos : \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k2\_integra5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k19\_sin\_cos : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $k1\_seq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k16\_sin\_cos : \iota$  be given. Let  $k3\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_real\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_real\_1 : \iota \Rightarrow \iota$  be given. Let  $k21\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $k18\_sin\_cos : \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $v1\_xcmplx\_0 : \iota \Rightarrow o$  be given. Let  $k6\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $v2\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_numbers : \iota$  be given. Let  $np\_0 : \iota$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  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  $k4\_xcmplx\_0 : \iota \Rightarrow \iota$  be given. Let  $v1\_xxreal\_0 : \iota \Rightarrow o$  be given. Let  $v3\_membered : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
& \forall X0.(v1\_xreal\_0 X0) \Rightarrow ((k1\_seq\_1 k16\_sin\_cos (k3\_real\_1 \\
& X0 (k8\_real\_1 np\_2 k32\_sin\_cos)) = k1\_seq\_1 k16\_sin\_cos X0) \wedge ( \\
& (k1\_seq\_1 k19\_sin\_cos (k3\_real\_1 X0 (k8\_real\_1 np\_2 k32\_sin\_cos)) = \\
& k1\_seq\_1 k19\_sin\_cos X0) \wedge ((k1\_seq\_1 k16\_sin\_cos (k9\_real\_1 ( \\
& k10\_real\_1 k32\_sin\_cos np\_2) X0) = k1\_seq\_1 k19\_sin\_cos X0) \wedge ( \\
& (k1\_seq\_1 k19\_sin\_cos (k9\_real\_1 (k10\_real\_1 k32\_sin\_cos np\_2) \\
& X0) = k1\_seq\_1 k16\_sin\_cos X0) \wedge ((k1\_seq\_1 k16\_sin\_cos (k7\_real\_1 \\
& (k10\_real\_1 k32\_sin\_cos np\_2) X0) = k1\_seq\_1 k19\_sin\_cos X0) \wedge \\
& ((k1\_seq\_1 k19\_sin\_cos (k7\_real\_1 (k10\_real\_1 k32\_sin\_cos np\_2) \\
& X0) = k1\_real\_1 (k1\_seq\_1 k16\_sin\_cos X0)) \wedge ((k1\_seq\_1 k16\_sin\_cos \\
& (k7\_real\_1 k32\_sin\_cos X0) = k1\_real\_1 (k1\_seq\_1 k16\_sin\_cos X0)) \wedge \\
& (k1\_seq\_1 k19\_sin\_cos (k7\_real\_1 k32\_sin\_cos X0) = k1\_real\_1 ( \\
& k1\_seq\_1 k19\_sin\_cos X0)))))))))
\end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
& ((k21\_sin\_cos (k10\_real\_1 k32\_sin\_cos np\_2) = k6\_numbers) \wedge (( \\
& k18\_sin\_cos (k10\_real\_1 k32\_sin\_cos np\_2) = np\_1) \wedge ((k21\_sin\_cos \\
& k32\_sin\_cos = k1\_real\_1 np\_1) \wedge ((k18\_sin\_cos k32\_sin\_cos = k6\_numbers) \wedge \\
& ((k21\_sin\_cos (k7\_real\_1 k32\_sin\_cos (k10\_real\_1 k32\_sin\_cos \\
& np\_2)) = k6\_numbers) \wedge ((k18\_sin\_cos (k7\_real\_1 k32\_sin\_cos ( \\
& k10\_real\_1 k32\_sin\_cos np\_2)) = k1\_real\_1 np\_1) \wedge ((k21\_sin\_cos \\
& (k8\_real\_1 np\_2 k32\_sin\_cos) = np\_1) \wedge (k18\_sin\_cos (k8\_real\_1 \\
& np\_2 k32\_sin\_cos) = k6\_numbers))))))
\end{aligned} \tag{2}$$

Assume the following.

$$\begin{aligned}
& ((k1\_seq\_1 k19\_sin\_cos (k10\_real\_1 k32\_sin\_cos np\_2) = k6\_numbers) \wedge \\
& ((k1\_seq\_1 k16\_sin\_cos (k10\_real\_1 k32\_sin\_cos np\_2) = np\_1) \wedge \\
& ((k1\_seq\_1 k19\_sin\_cos k32\_sin\_cos = k1\_real\_1 np\_1) \wedge ((k1\_seq\_1 \\
& k16\_sin\_cos k32\_sin\_cos = k6\_numbers) \wedge ((k1\_seq\_1 k19\_sin\_cos \\
& (k7\_real\_1 k32\_sin\_cos (k10\_real\_1 k32\_sin\_cos np\_2)) = k6\_numbers) \wedge \\
& ((k1\_seq\_1 k16\_sin\_cos (k7\_real\_1 k32\_sin\_cos (k10\_real\_1 k32\_sin\_cos \\
& np\_2)) = k1\_real\_1 np\_1) \wedge ((k1\_seq\_1 k19\_sin\_cos (k8\_real\_1 \\
& np\_2 k32\_sin\_cos) = np\_1) \wedge (k1\_seq\_1 k16\_sin\_cos (k8\_real\_1 \\
& np\_2 k32\_sin\_cos) = k6\_numbers))))))
\end{aligned} \tag{3}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (X0 = k1\_xboole\_0) \tag{4}$$

Assume the following.

$$\forall X0.(v1\_xcmplx\_0 X0) \Rightarrow (k6\_xcmplx\_0 X0 k6\_numbers = X0) \tag{5}$$

Assume the following.

$$\begin{aligned}
& \forall X0.((\neg v1\_xboole\_0 X0) \wedge ((v2\_measure5 X0) \wedge (m1\_subset\_1 \\
& X0 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (k2\_integra5 X0 k19\_sin\_cos = \\
& k9\_real\_1 (k3\_funct\_2 k1\_numbers k1\_numbers k16\_sin\_cos (k4\_seq\_4 \\
& X0)) (k3\_funct\_2 k1\_numbers k1\_numbers k16\_sin\_cos (k5\_seq\_4 \\
& X0)))
\end{aligned} \tag{6}$$

Assume the following.

$$\begin{aligned}
& \forall X0.(m1\_subset\_1 X0 k1\_numbers) \Rightarrow (\forall X1.(m1\_subset\_1 \\
& X1 k1\_numbers) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 X2) \wedge ((v2\_measure5 \\
& X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow ((X2 = k1\_rcomp\_1 \\
& X0 X1) \Rightarrow ((k4\_seq\_4 X2 = X1) \wedge (k5\_seq\_4 X2 = X0))))))
\end{aligned} \tag{7}$$

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \tag{8}$$

Assume the following.

$$\begin{aligned} & ((v2\_xxreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ & ((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (9)$$

Assume the following.

$$v1\_xboole\_0 \ np\_0 \quad (10)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k1\_numbers) \wedge (v1\_xreal\_0 \\ & \ X1)) \Rightarrow (k9\_real\_1 \ X0 \ X1 = k6\_xcmplx\_0 \ X0 \ X1) \end{aligned} \quad (11)$$

Assume the following.

$$k6\_numbers = k1\_xboole\_0 \quad (12)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. \forall X3. ((\neg v1\_xboole\_0 \ X0) \wedge \\ & (((v1\_funct\_1 \ X2) \wedge ((v1\_funct\_2 \ X2 \ X0 \ X1) \wedge (m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \\ & \ (k2\_zfmisc\_1 \ X0 \ X1)))))) \wedge (m1\_subset\_1 \ X3 \ X0))) \Rightarrow (k3\_funct\_2 \ X0 \\ & \ X1 \ X2 \ X3 = k1\_funct\_1 \ X2 \ X3) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v3\_valued\_0 \\ & \ X0))) \Rightarrow (k1\_seq\_1 \ X0 \ X1 = k1\_funct\_1 \ X0 \ X1) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (k1\_real\_1 \ X0 = k4\_xcmplx\_0 \ X0) \quad (15)$$

Assume the following.

$$\begin{aligned} & \exists X0. (v1\_xboole\_0 \ X0) \wedge ((v1\_xcmplx\_0 \ X0) \wedge ((v1\_xxreal\_0 \\ & \ X0) \wedge (v1\_xreal\_0 \ X0))) \end{aligned} \quad (16)$$

Assume the following.

$$\forall X0. (m1\_subset\_1 \ X0 \ k1\_numbers) \Rightarrow (k1\_real\_1 \ (k1\_real\_1 \ X0) = X0) \quad (17)$$

Assume the following.

$$\begin{aligned} & \forall X0. (v1\_xreal\_0 \ X0) \Rightarrow ((v1\_xcmplx\_0 \ (k4\_xcmplx\_0 \ X0)) \wedge \\ & \ (v1\_xreal\_0 \ (k4\_xcmplx\_0 \ X0))) \end{aligned} \quad (18)$$

Assume the following.

$$v3\_membered \ k1\_numbers \quad (19)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (20)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 \ X0 \ k1\_numbers)\wedge(v1\_xreal\_0 \ X1))\Rightarrow(m1\_subset\_1 \ (k8\_real\_1 \ X0 \ X1) \ k1\_numbers) \quad (21)$$

Assume the following.

$$m1\_subset\_1 \ k32\_sin\_cos \ k1\_numbers \quad (22)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k1\_numbers)\Rightarrow(m1\_subset\_1 \ (k1\_real\_1 \ X0) \ k1\_numbers) \quad (23)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k1\_numbers)\Rightarrow(m1\_subset\_1 \ (k18\_sin\_cos \ X0) \ k1\_numbers) \quad (24)$$

Assume the following.

$$(v1\_funct\_1 \ k16\_sin\_cos)\wedge((v1\_funct\_2 \ k16\_sin\_cos \ k1\_numbers \ k1\_numbers)\wedge(m1\_subset\_1 \ k16\_sin\_cos \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_numbers \ k1\_numbers)))) \quad (25)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 \ X0 \ k1\_numbers)\wedge(v1\_xreal\_0 \ X1))\Rightarrow(m1\_subset\_1 \ (k10\_real\_1 \ X0 \ X1) \ k1\_numbers) \quad (26)$$

Assume the following.

$$k1\_xboole\_0 = the \ (\lambda X0 : \iota.v1\_xboole\_0 \ X0) \quad (27)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 \ X0)\Leftrightarrow(X0 \in \ k1\_numbers) \quad (28)$$

Assume the following.

$$\forall X0.\forall X1.((m1\_subset\_1 \ X0 \ k1\_numbers)\wedge(v1\_xreal\_0 \ X1))\Rightarrow(k8\_real\_1 \ X0 \ X1 = k8\_real\_1 \ X1 \ X0) \quad (29)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k1\_numbers)\Rightarrow(v1\_xreal\_0 \ X0) \quad (30)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X1)))\Rightarrow(v1\_relat\_1 \ X2) \quad (31)$$

Assume the following.

$$\forall X0.\forall X1.(v3\_membered \ X1)\Rightarrow(\forall X2.(m1\_subset\_1 \ X2 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ X0 \ X1)))\Rightarrow(v3\_valued\_0 \ X2)) \quad (32)$$

**Theorem 1**

$$\forall X0. ((\neg v1\_xboole\_0 X0) \wedge (v2\_measure5 X0) \wedge (m1\_subset\_1 X0 (k1\_zfmisc\_1 k1\_numbers))) \Rightarrow ((X0 = k1\_rcomp\_1 k6\_numbers (k8\_real\_1 k32\_sin\_cos np\_2)) \Rightarrow (k2\_integra5 X0 k19\_sin\_cos = k6\_numbers))$$