

# t45\_integr19 (TMbjFGbxvHMFZqEKPr- jnmC5FLMR8fmMs6S5)

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Let  $m2\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_euclid : \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k4\_real\_ns1 : \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v3\_integr15 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k3\_integra5 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k12\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k6\_integr18 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $v2\_measure5 : \iota \Rightarrow o$  be given. Let  $r1\_integr18 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k11\_integr15 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_integr18 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_rcomp\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v6\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v7\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v2\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $l1\_normsp\_1 : \iota \Rightarrow o$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v3\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $v1\_normsp\_1 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\
 & ((\neg v1\_xboole\_0 X1) \wedge ((v2\_measure5 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 \\
 & \quad k1\_numbers)))) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge (m1\_subset\_1 X2 \\
 & \quad (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers (k1\_euclid X0)))))) \Rightarrow (\forall X3. \\
 & ((v1\_funct\_1 X3) \wedge (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\
 & \quad (u1\_struct\_0 (k4\_real\_ns1 X0)))))) \Rightarrow (((X2 = X3) \wedge ((v3\_integr15 \\
 & \quad (k2\_partfun1 k1\_numbers (k1\_euclid X0) X2 X1) X0) \wedge ((r1\_tarski \\
 & \quad X1 (k1\_relset\_1 k1\_numbers X2)) \wedge (r1\_integr15 X0 X1 X2))) \Rightarrow ((r1\_integr18 \\
 & \quad (k4\_real\_ns1 X0) X1 X3) \wedge (k11\_integr15 X0 X1 X2 = k5\_integr18 (k4\_real\_ns1 \\
 & \quad X0) X1 X3))))))
 \end{aligned}$$

(1)

Assume the following.

$$\forall X0.\forall X1.(X0 \in X1) \Rightarrow (m1\_subset\_1 X0 X1) \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(m2\_subset\_1 X0 k1\_numbers k5\_numbers) \Rightarrow (\forall X1. \\ & ((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 k1\_numbers \\ & (k1\_euclid X0)))) \Rightarrow (\forall X2. ((\neg v1\_xboole\_0 X2) \wedge ((v2\_measure5 \\ & X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\forall X4.(m1\_subset\_1 X4 k1\_numbers) \Rightarrow \\ & ((X2 = k1\_rcomp\_1 X3 X4) \Rightarrow (k11\_integr15 X0 X2 X1 = k12\_integr15 X3 \\ & X4 X0 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v13\_algstr\_0 X0) \wedge ((v2\_rlvect\_1 \\ & X0) \wedge ((v3\_rlvect\_1 X0) \wedge ((v4\_rlvect\_1 X0) \wedge ((v5\_rlvect\_1 X0) \wedge \\ & ((v6\_rlvect\_1 X0) \wedge ((v7\_rlvect\_1 X0) \wedge ((v8\_rlvect\_1 X0) \wedge ((v3\_normsp\_0 \\ & X0) \wedge ((v4\_normsp\_0 X0) \wedge ((v2\_normsp\_1 X0) \wedge (l1\_normsp\_1 X0)))))))))) \Rightarrow \\ & (\forall X1.((v1\_funct\_1 X1) \wedge (m1\_subset\_1 X1 (k1\_zfmisc\_1 (k2\_zfmisc\_1 \\ & k1\_numbers (u1\_struct\_0 X0)))) \Rightarrow (\forall X2.((\neg v1\_xboole\_0 \\ & X2) \wedge ((v2\_measure5 X2) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 k1\_numbers)))) \Rightarrow \\ & (\forall X3.(m1\_subset\_1 X3 k1\_numbers) \Rightarrow (\forall X4.(m1\_subset\_1 \\ & X4 k1\_numbers) \Rightarrow ((X2 = k1\_rcomp\_1 X3 X4) \Rightarrow (k5\_integr18 X0 X2 X1 = k6\_integr18 \\ & X0 X1 X3 X4)))))) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} & \forall X0.\forall X1.((\neg v1\_xboole\_0 X0) \wedge ((\neg v1\_xboole\_0 X1) \wedge \\ & (m1\_subset\_1 X1 (k1\_zfmisc\_1 X0)))) \Rightarrow (\forall X2.(m2\_subset\_1 \\ & X2 X0 X1) \Leftrightarrow (m1\_subset\_1 X2 X1)) \end{aligned} \quad (5)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (6)$$

Assume the following.

$$(\neg v1\_xboole\_0 k4\_ordinal1) \wedge (v3\_ordinal1 k4\_ordinal1) \quad (7)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v7\_ordinal1 X0) \Rightarrow ((\neg v2\_struct\_0 (k4\_real\_ns1 X0)) \wedge \\ & ((v13\_algstr\_0 (k4\_real\_ns1 X0)) \wedge ((v2\_rlvect\_1 (k4\_real\_ns1 \\ & X0)) \wedge ((v3\_rlvect\_1 (k4\_real\_ns1 X0)) \wedge ((v4\_rlvect\_1 (k4\_real\_ns1 \\ & X0)) \wedge ((v5\_rlvect\_1 (k4\_real\_ns1 X0)) \wedge ((v6\_rlvect\_1 (k4\_real\_ns1 \\ & X0)) \wedge ((v7\_rlvect\_1 (k4\_real\_ns1 X0)) \wedge ((v8\_rlvect\_1 (k4\_real\_ns1 \\ & X0)) \wedge ((v3\_normsp\_0 (k4\_real\_ns1 X0)) \wedge ((v4\_normsp\_0 (k4\_real\_ns1 \\ & X0)) \wedge ((v1\_normsp\_1 (k4\_real\_ns1 X0)) \wedge (v2\_normsp\_1 (k4\_real\_ns1 \\ & X0)))))))))))))) \end{aligned} \quad (8)$$

Assume the following.

$$\neg v1\_xboole\_0 \ k1\_numbers \quad (9)$$

Assume the following.

$$m1\_subset\_1 \ k5\_numbers \ (k1\_zfmisc\_1 \ k1\_numbers) \quad (10)$$

Assume the following.

$$\forall X0.(v7\_ordinal1 \ X0) \Rightarrow ((\neg v2\_struct\_0 \ (k4\_real\_ns1 \ X0)) \wedge ((v1\_normsp\_1 \ (k4\_real\_ns1 \ X0)) \wedge (l1\_normsp\_1 \ (k4\_real\_ns1 \ X0)))) \quad (11)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_xreal\_0 \ X0) \wedge (v1\_xreal\_0 \ X1)) \Rightarrow ((\neg v1\_xboole\_0 \ (k3\_integra5 \ X0 \ X1)) \wedge ((v2\_measure5 \ (k3\_integra5 \ X0 \ X1)) \wedge (m1\_subset\_1 \ (k3\_integra5 \ X0 \ X1) \ (k1\_zfmisc\_1 \ k1\_numbers)))) \quad (12)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 \ X0) \Rightarrow (\forall X1.(v1\_xreal\_0 \ X1) \Rightarrow ((r1\_xxreal\_0 \ X0 \ X1) \Rightarrow (k3\_integra5 \ X0 \ X1 = k1\_rcomp\_1 \ X0 \ X1))) \quad (13)$$

Assume the following.

$$\forall X0.(v1\_xreal\_0 \ X0) \Leftrightarrow (X0 \in k1\_numbers) \quad (14)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 \ X0 \ k4\_ordinal1) \Rightarrow (v7\_ordinal1 \ X0) \quad (15)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.(m2\_subset\_1 \ X0 \ k1\_numbers \ k5\_numbers) \Rightarrow (\forall X1. \\ & (v1\_xreal\_0 \ X1) \Rightarrow (\forall X2.(v1\_xreal\_0 \ X2) \Rightarrow (\forall X3.((v1\_funct\_1 \\ & X3) \wedge (m1\_subset\_1 \ X3 \ (k1\_zfmisc\_1 \ (k2\_zfmisc\_1 \ k1\_numbers \ (k1\_euclid \\ & X0)))))) \Rightarrow (\forall X4.((v1\_funct\_1 \ X4) \wedge (m1\_subset\_1 \ X4 \ (k1\_zfmisc\_1 \\ & (k2\_zfmisc\_1 \ k1\_numbers \ (u1\_struct\_0 \ (k4\_real\_ns1 \ X0)))))) \Rightarrow \\ & (((X3 = X4) \wedge ((r1\_xxreal\_0 \ X1 \ X2) \wedge ((v3\_integr15 \ (k2\_partfun1 \ k1\_numbers \\ & (k1\_euclid \ X0) \ X3 \ (k3\_integra5 \ X1 \ X2)) \ X0) \wedge ((r1\_tarski \ (k3\_integra5 \\ & X1 \ X2) \ (k1\_relset\_1 \ k1\_numbers \ X3)) \wedge (r1\_integr15 \ X0 \ (k3\_integra5 \\ & X1 \ X2) \ X3)))))) \Rightarrow (k12\_integr15 \ X1 \ X2 \ X0 \ X3 = k6\_integr18 \ (k4\_real\_ns1 \\ & X0) \ X4 \ X1 \ X2)))))) \end{aligned}$$