

# t19\_wsierp\_1 (TMdHGPTiNgPCpNnMqXm- FaQWuXraPf19mKeN)

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Let  $k2\_finseq\_3 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_1 : \iota$  be given. Let  $k9\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_xboole\_0 : \iota$  be given. Let  $k10\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_2 : \iota$  be given. Let  $k11\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $np\_3 : \iota$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $v1\_finseq\_1 : \iota \Rightarrow o$  be given. Let  $k3\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k1\_funct\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_finseq\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k10\_xtuple\_0 : \iota \Rightarrow \iota$  be given. Let  $k1\_tarski : \iota \Rightarrow \iota$  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  $k1\_numbers : \iota$  be given. Let  $k5\_numbers : \iota$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k2\_xcmplx\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k5\_finseq\_1 : \iota \Rightarrow \iota$  be given. Let  $k4\_ordinal1 : \iota$  be given. Let  $v7\_ordinal1 : \iota \Rightarrow o$  be given. Let  $k2\_nat\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. ((v1\_relat\_1 X2) \wedge ((v1\_funct\_1 \\ & X2) \wedge (v1\_finseq\_1 X2))) \Rightarrow ((X2 = k10\_finseq\_1 X0 X1) \Leftrightarrow ((k3\_finseq\_1 \\ & X2 = np\_2) \wedge ((k1\_funct\_1 X2 np\_1 = X0) \wedge (k1\_funct\_1 X2 np\_2 = X1)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. \forall X2. (k11\_finseq\_1 X0 X1 X2 = k7\_finseq\_1 \\ & (k9\_finseq\_1 X0) (k10\_finseq\_1 X1 X2)) \wedge (k11\_finseq\_1 X0 X1 X2 = \\ & k7\_finseq\_1 (k10\_finseq\_1 X0 X1) (k9\_finseq\_1 X2)) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0. \forall X1. ((v1\_relat\_1 X1) \wedge ((v1\_funct\_1 X1) \wedge (v1\_finseq\_1 \\ & X1))) \Rightarrow ((X1 = k9\_finseq\_1 X0) \Leftrightarrow ((k3\_finseq\_1 X1 = np\_1) \wedge (k10\_xtuple\_0 \\ & X1 = k1\_tarski X0))) \end{aligned} \quad (3)$$

Assume the following.

$$\begin{aligned} & \forall X0. ((v1\_relat\_1 X0) \wedge ((v1\_funct\_1 X0) \wedge (v1\_finseq\_1 X0))) \Rightarrow \\ & ((k7\_finseq\_1 X0 k1\_xboole\_0 = X0) \wedge (k7\_finseq\_1 k1\_xboole\_0 X0 = \\ & X0)) \end{aligned} \quad (4)$$

Assume the following.

$$\begin{aligned} &((v2\_xxreal\_0 \ np\_2) \wedge (m2\_subset\_1 \ np\_2 \ k1\_numbers \ k5\_numbers)) \wedge \\ &((m1\_subset\_1 \ np\_2 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_2 \ k1\_numbers)) \end{aligned} \quad (5)$$

Assume the following.

$$\begin{aligned} &((v2\_xxreal\_0 \ np\_1) \wedge (m2\_subset\_1 \ np\_1 \ k1\_numbers \ k5\_numbers)) \wedge \\ &((m1\_subset\_1 \ np\_1 \ k5\_numbers) \wedge (m1\_subset\_1 \ np\_1 \ k1\_numbers)) \end{aligned} \quad (6)$$

Assume the following.

$$k2\_xcmplx\_0 \ np\_2 \ np\_1 = np\_3 \quad (7)$$

Assume the following.

$$k2\_xcmplx\_0 \ np\_1 \ np\_1 = np\_2 \quad (8)$$

Assume the following.

$$r1\_xxreal\_0 \ np\_1 \ np\_1 \quad (9)$$

Assume the following.

$$\forall X0. k9\_finseq\_1 \ X0 = k5\_finseq\_1 \ X0 \quad (10)$$

Assume the following.

$$k5\_numbers = k4\_ordinal1 \quad (11)$$

Assume the following.

$$\begin{aligned} &\forall X0. \forall X1. ((m1\_subset\_1 \ X0 \ k5\_numbers) \wedge (v7\_ordinal1 \\ &X1)) \Rightarrow (k2\_nat\_1 \ X0 \ X1 = k2\_xcmplx\_0 \ X0 \ X1) \end{aligned} \quad (12)$$

Assume the following.

$$\begin{aligned} &\forall X0. ((v1\_relat\_1 \ X0) \wedge ((v1\_funct\_1 \ X0) \wedge (v1\_finseq\_1 \ X0))) \Rightarrow \\ &(\forall X1. (k2\_finseq\_3 \ np\_1 \ (k7\_finseq\_1 \ (k9\_finseq\_1 \ X1) \\ &X0) = X0) \wedge (k2\_finseq\_3 \ (k2\_nat\_1 \ (k3\_finseq\_1 \ X0) \ np\_1) \ (k7\_finseq\_1 \\ &X0 \ (k9\_finseq\_1 \ X1)) = X0)) \end{aligned} \quad (13)$$

Assume the following.

$$\begin{aligned} &\forall X0. (v7\_ordinal1 \ X0) \Rightarrow (\forall X1. ((v1\_relat\_1 \ X1) \wedge (( \\ &v1\_funct\_1 \ X1) \wedge (v1\_finseq\_1 \ X1))) \Rightarrow (\forall X2. ((v1\_relat\_1 \\ &X2) \wedge (v1\_funct\_1 \ X2) \wedge (v1\_finseq\_1 \ X2))) \Rightarrow (((r1\_xxreal\_0 \ X0 \ ( \\ &k3\_finseq\_1 \ X1)) \Rightarrow (k2\_finseq\_3 \ X0 \ (k7\_finseq\_1 \ X1 \ X2) = k7\_finseq\_1 \\ &(k2\_finseq\_3 \ X0 \ X1) \ X2)) \wedge ((r1\_xxreal\_0 \ np\_1 \ X0) \Rightarrow (k2\_finseq\_3 \\ &(k2\_nat\_1 \ (k3\_finseq\_1 \ X1) \ X0) \ (k7\_finseq\_1 \ X1 \ X2) = k7\_finseq\_1 \\ &X1 \ (k2\_finseq\_3 \ X0 \ X2)))))) \end{aligned} \quad (14)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 (k10\_finseq\_1 X0 X1)) \wedge (v1\_funct\_1 (k10\_finseq\_1 X0 X1)) \quad (15)$$

Assume the following.

$$\forall X0.v1\_finseq\_1 (k5\_finseq\_1 X0) \quad (16)$$

Assume the following.

$$v1\_xboole\_0 k1\_xboole\_0 \quad (17)$$

Assume the following.

$$\forall X0.\forall X1.v1\_finseq\_1 (k10\_finseq\_1 X0 X1) \quad (18)$$

Assume the following.

$$\forall X0.(v1\_relat\_1 (k9\_finseq\_1 X0)) \wedge (v1\_funct\_1 (k9\_finseq\_1 X0)) \quad (19)$$

Assume the following.

$$\forall X0.\forall X1.k10\_finseq\_1 X0 X1 = k7\_finseq\_1 (k9\_finseq\_1 X0) (k9\_finseq\_1 X1) \quad (20)$$

Assume the following.

$$\forall X0.(m1\_subset\_1 X0 k4\_ordinal1) \Rightarrow (v7\_ordinal1 X0) \quad (21)$$

Assume the following.

$$\forall X0.((v1\_relat\_1 X0) \wedge (v1\_xboole\_0 X0)) \Rightarrow ((v1\_relat\_1 X0) \wedge (v1\_finseq\_1 X0)) \quad (22)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v1\_relat\_1 X0) \quad (23)$$

Assume the following.

$$\forall X0.(v1\_xboole\_0 X0) \Rightarrow (v1\_funct\_1 X0) \quad (24)$$

### Theorem 1

$$\begin{aligned} & \forall X0.\forall X1.\forall X2.(k2\_finseq\_3 np\_1 (k9\_finseq\_1 \\ & X0) = k1\_xboole\_0) \wedge ((k2\_finseq\_3 np\_1 (k10\_finseq\_1 X0 X1) = k9\_finseq\_1 \\ & X1) \wedge ((k2\_finseq\_3 np\_2 (k10\_finseq\_1 X0 X1) = k9\_finseq\_1 X0) \wedge \\ & ((k2\_finseq\_3 np\_1 (k11\_finseq\_1 X0 X1 X2) = k10\_finseq\_1 X1 X2) \wedge \\ & ((k2\_finseq\_3 np\_2 (k11\_finseq\_1 X0 X1 X2) = k10\_finseq\_1 X0 X2) \wedge \\ & (k2\_finseq\_3 np\_3 (k11\_finseq\_1 X0 X1 X2) = k10\_finseq\_1 X0 X1)))))) \end{aligned}$$