

## t19\_waybel18

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v6\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v2\_waybel18 : \iota \Rightarrow o$  be given. Let  $v1\_xboole\_0 : \iota \Rightarrow o$  be given. Let  $r1\_waybel18 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k3\_waybel18 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k9\_waybel18 : \iota$  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  $u1\_struct\_0 : \iota \Rightarrow \iota$  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  $v3\_tops\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k8\_waybel18 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_waybel18 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k2\_funcop\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v1\_waybel18 : \iota \Rightarrow o$  be given. Let  $l1\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v4\_waybel\_3 : \iota \Rightarrow o$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $v1\_relat\_1 : \iota \Rightarrow o$  be given. Let  $v4\_relat\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $v1\_partfun1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge ((v6\_pre\_topc \\
 & \quad X0) \wedge (l1\_pre\_topc X0)))) \Rightarrow (\exists X1. (\neg v1\_xboole\_0 X1) \wedge (\exists X2. \\
 & \quad ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 X2 (u1\_struct\_0 X0) (u1\_struct\_0 \\
 & \quad (k3\_waybel18 X1 (k7\_funcop\_1 X1 k9\_waybel18)))) \wedge (m1\_subset\_1 \\
 & \quad X2 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 (k3\_waybel18 \\
 & \quad X1 (k7\_funcop\_1 X1 k9\_waybel18)))))) \wedge (v3\_tops\_2 (k8\_waybel18 \\
 & \quad X0 (k3\_waybel18 X1 (k7\_funcop\_1 X1 k9\_waybel18)) X2) X0 (k7\_waybel18 \\
 & \quad X0 (k3\_waybel18 X1 (k7\_funcop\_1 X1 k9\_waybel18)) X2))))))
 \end{aligned} \tag{1}$$

Assume the following.

$$\begin{aligned}
 & \forall X0. ((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\
 & \quad X0))) \Rightarrow (\forall X1. ((\neg v2\_struct\_0 X1) \wedge ((v2\_pre\_topc X1) \wedge (l1\_pre\_topc \\
 & \quad X1))) \Rightarrow ((v2\_waybel18 X0) \Rightarrow (\forall X2. ((v1\_funct\_1 X2) \wedge ((v1\_funct\_2 \\
 & \quad X2 (u1\_struct\_0 X0) (u1\_struct\_0 X1)) \wedge (m1\_subset\_1 X2 (k1\_zfmisc\_1 \\
 & \quad (k2\_zfmisc\_1 (u1\_struct\_0 X0) (u1\_struct\_0 X1)))))) \Rightarrow ((v3\_tops\_2 \\
 & \quad (k8\_waybel18 X0 X1 X2) X0 (k7\_waybel18 X0 X1 X2)) \Rightarrow (r1\_waybel18 X0 \\
 & \quad X1))))))
 \end{aligned} \tag{2}$$

Assume the following.

$$\forall X0.\forall X1.k7\_funcop\_1 X0 X1 = k2\_funcop\_1 X0 X1 \quad (3)$$

Assume the following.

$$\forall X0.\forall X1.(l1\_pre\_topc X1) \Rightarrow (v1\_waybel18 (k2\_funcop\_1 X0 X1)) \quad (4)$$

Assume the following.

$$\forall X0.\forall X1.((\neg v2\_struct\_0 X1) \wedge (l1\_struct\_0 X1)) \Rightarrow (v4\_waybel\_3 (k2\_funcop\_1 X0 X1)) \quad (5)$$

Assume the following.

$$(\neg v2\_struct\_0 k9\_waybel18) \wedge ((v1\_pre\_topc k9\_waybel18) \wedge (v2\_pre\_topc k9\_waybel18)) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 (k2\_funcop\_1 X0 X1)) \wedge ((v4\_relat\_1 (k2\_funcop\_1 X0 X1) X0) \wedge ((v1\_funct\_1 (k2\_funcop\_1 X0 X1)) \wedge (v1\_partfun1 (k2\_funcop\_1 X0 X1) X0))) \quad (7)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0) \wedge ((v4\_waybel\_3 X1) \wedge (v1\_waybel18 X1)))) \Rightarrow ((\neg v2\_struct\_0 (k3\_waybel18 X0 X1)) \wedge ((v1\_pre\_topc (k3\_waybel18 X0 X1)) \wedge (v2\_pre\_topc (k3\_waybel18 X0 X1)))) \quad (8)$$

Assume the following.

$$\forall X0.\forall X1.(v1\_relat\_1 (k2\_funcop\_1 X0 X1)) \wedge (v1\_funct\_1 (k2\_funcop\_1 X0 X1)) \quad (9)$$

Assume the following.

$$\forall X0.\forall X1.v4\_relat\_1 (k2\_funcop\_1 X0 X1) X0 \quad (10)$$

Assume the following.

$$\forall X0.(l1\_pre\_topc X0) \Rightarrow (l1\_struct\_0 X0) \quad (11)$$

Assume the following.

$$(v1\_pre\_topc k9\_waybel18) \wedge (l1\_pre\_topc k9\_waybel18) \quad (12)$$

Assume the following.

$$\forall X0.\forall X1.((v1\_relat\_1 X1) \wedge ((v4\_relat\_1 X1 X0) \wedge (v1\_funct\_1 X1) \wedge (v1\_partfun1 X1 X0) \wedge ((v4\_waybel\_3 X1) \wedge (v1\_waybel18 X1)))) \Rightarrow ((v1\_pre\_topc (k3\_waybel18 X0 X1)) \wedge ((v2\_pre\_topc (k3\_waybel18 X0 X1)) \wedge (l1\_pre\_topc (k3\_waybel18 X0 X1)))) \quad (13)$$

**Theorem 1**

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge ((v6\_pre\_topc X0) \wedge (l1\_pre\_topc X0)))) \Rightarrow (\neg(v2\_waybel18 X0) \wedge (\forall X1. (\neg v1\_xboole\_0 X1) \Rightarrow (\neg r1\_waybel18 X0 (k3\_waybel18 X1 (k7\_funcop\_1 X1 k9\_waybel18))))))$$