

## t91\_goboard6

(TMZtExv6zahggTETi3U3tAdd1L6SWYUkU3u)

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Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v6\_metric\_1 : \iota \Rightarrow o$  be given. Let  $v7\_metric\_1 : \iota \Rightarrow o$  be given. Let  $v8\_metric\_1 : \iota \Rightarrow o$  be given. Let  $v9\_metric\_1 : \iota \Rightarrow o$  be given. Let  $l1\_metric\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $k3\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_xreal\_0 : \iota \Rightarrow o$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $m1\_connsp\_2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k9\_metric\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $v2\_pre\_topc : \iota \Rightarrow o$  be given. Let  $l1\_pre\_topc : \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $v3\_pre\_topc : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $u1\_pre\_topc : \iota \Rightarrow \iota$  be given. Let  $k2\_pcomps\_1 : \iota \Rightarrow \iota$  be given. Let  $v1\_pre\_topc : \iota \Rightarrow o$  be given. Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v2\_pre\_topc X0) \wedge (l1\_pre\_topc \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (k1\_zfmisc\_1 (u1\_struct\_0 \\ & X0))) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X0)) \Rightarrow (((v3\_pre\_topc \\ & X1 X0) \wedge (X2 \in X1)) \Rightarrow (m1\_connsp\_2 X1 X0 X2)))) \end{aligned} \quad (1)$$

Assume the following.

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge (l1\_metric\_1 \\ & X0))) \Rightarrow (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2. \\ & (v1\_xreal\_0 X2) \Rightarrow ((\neg r1\_xxreal\_0 X2 k6\_numbers) \Rightarrow (X1 \in k9\_metric\_1 \\ & X0 X1 X2)))) \end{aligned} \quad (2)$$

Assume the following.

$$\begin{aligned} & \forall X0.(v1\_xreal\_0 X0) \Rightarrow (\forall X1.((v9\_metric\_1 X1) \wedge (l1\_metric\_1 \\ & X1)) \Rightarrow (\forall X2.(m1\_subset\_1 X2 (u1\_struct\_0 X1)) \Rightarrow (\forall X3. \\ & (m1\_subset\_1 X3 (k1\_zfmisc\_1 (u1\_struct\_0 (k3\_pcomps\_1 X1)))) \Rightarrow \\ & ((X3 = k9\_metric\_1 X1 X2 X0) \Rightarrow (v3\_pre\_topc X3 (k3\_pcomps\_1 X1)))))) \end{aligned} \quad (3)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow ((u1\_struct\_0 X0 = u1\_struct\_0 (k3\_pcomps\_1 X0)) \wedge (u1\_pre\_topc (k3\_pcomps\_1 X0) = k2\_pcomps\_1 X0)) \quad (4)$$

Assume the following.

$$\forall X0.((\neg v2\_struct\_0 X0) \wedge (l1\_metric\_1 X0)) \Rightarrow (\neg v2\_struct\_0 (k3\_pcomps\_1 X0)) \quad (5)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow ((v1\_pre\_topc (k3\_pcomps\_1 X0)) \wedge (v2\_pre\_topc (k3\_pcomps\_1 X0))) \quad (6)$$

Assume the following.

$$\forall X0.\forall X1.\forall X2.((l1\_metric\_1 X0) \wedge ((m1\_subset\_1 X1 (u1\_struct\_0 X0)) \wedge (v1\_xreal\_0 X2))) \Rightarrow (m1\_subset\_1 (k9\_metric\_1 X0 X1 X2) (k1\_zfmisc\_1 (u1\_struct\_0 X0))) \quad (7)$$

Assume the following.

$$\forall X0.(l1\_metric\_1 X0) \Rightarrow (l1\_pre\_topc (k3\_pcomps\_1 X0)) \quad (8)$$

**Theorem 1**

$$\begin{aligned} & \forall X0.((\neg v2\_struct\_0 X0) \wedge ((v6\_metric\_1 X0) \wedge ((v7\_metric\_1 \\ & X0) \wedge ((v8\_metric\_1 X0) \wedge ((v9\_metric\_1 X0) \wedge (l1\_metric\_1 X0)))))) \Rightarrow \\ & (\forall X1.(m1\_subset\_1 X1 (u1\_struct\_0 X0)) \Rightarrow (\forall X2.(m1\_subset\_1 \\ & X2 (u1\_struct\_0 (k3\_pcomps\_1 X0))) \Rightarrow (\forall X3.(v1\_xreal\_0 X3) \Rightarrow \\ & ((X1 = X2) \Rightarrow ((r1\_xreal\_0 X3 k6\_numbers) \vee (m1\_connsp\_2 (k9\_metric\_1 \\ & X0 X1 X3) (k3\_pcomps\_1 X0) X2)))))) \end{aligned}$$